PEACE/WILLISTON
FISH & WILDLIFE
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Fisheries Resources and Enhancement Potentials of Selected Tributaries of the Williston Reservoir Volume II

A. R. Langston and B. G. Blackman
April 1993

PWFWCP Report No. 70

The Peace/Williston Fish & Wildlife Compensation Program is a cooperative venture of BC Hydro and the provincial fish and wildlife management agencies, supported by funding from BC Hydro. The Program was established to enhance and protect fish and wildlife resources affected by the construction of the W.A.C. Bennett and Peace Canyon dams on the Peace River, and the subsequent creation of the Williston and Dinosaur Reservoirs.

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This report has been approved by the Peace/Williston Fish and Wildlife Compensation Program Fish Technical Committee.

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APPENDIX II (examples of data sheets, and point sample cards)

INTRODUCTION;

Williston Reservoir was formed in 1968 through the impoundment of the Peace River by the development of the W.A.C. Bennett Dam. This reservoir is the largest body of fresh water in British Columbia with a surface area of 1736 square kilometres and a drainage basin of 70,000 square kilometres (roughly three times the area of Vancouver Island). The watershed has 10 major rivers (drainage >1500 km.^{2}), 7 large rivers (drainage of 400-1500 km.^{2}), 49 medium rivers (drainage of 50-400 km.^{2}) and 262 small rivers (drainage <50 km.^{2}).

In 1988, the Peace Compensation Program was initiated. This program has been jointly undertaken by the Ministry of Environment, Lands and Parks, and B.C. Hydro for the purpose of enhancing and protecting natural resources in the Peace and Williston areas. The fisheries component of this program is financed through a six million dollar fund provided by B.C. Hydro. The fund is intended to provide long term funding to compensate for the loss of fisheries values caused by the creation of the reservoir. To ensure long term funding, the six million dollar compensation fund is set aside as principle. Annual operating budgets are funded through the interest accrued from the principle.

The Williston watershed was divided into three general habitat types for the purpose of identifying the unique characteristics and requirements of each. Individual programs were developed for the three habitat types, reservoir, rivers, and lakes. The rivers program goals were to; maintain and enhance native stocks of resident and migratory fish, and increase production through stocking where this will not compromise native stocks (Blackman, et. al. 1990). To achieve these goals it was necessary to evaluate existing fish populations, and habitat, in the rivers of the watershed. This information would then be documented to provide a database of biophysical information for all rivers investigated.

The construction of the dam flooded enormous amounts of river habitat and the resulting habitat transformations have caused profound changes in the fish populations (Blackman 1993). Previous studies (Nilson 1958, Grimas 1961, Lindstrom 1962, and Frey 1967) indicate that in the first few years after flooding, tremendous increases in fish populations occurred and then, following the normal "reservoir pattern" declined and are now in the process of stabilization. Riverine species unable to adapt to the new habitat have declined and species more suited to the reservoir have increased.

INTRODUCTION CONTINUED

The most noticeable changes in the fish populations have been the almost total disappearance of Arctic grayling and the dramatic decline in mountain whitefish numbers. Native rainbow trout populations have also shown a slow decline since the initial "boom fishery" in the early stages of the reservoir. "Lake whitefish and bull trout populations in the reservoir have increased and there is a growing kokanee population" (Blackman 1993). There is no evidence to date of any population increases in the tributary streams. Annual spawning runs of kokanee and lake whitefish may be increasing.

Extensive studies of the tributary streams were carried out in 1975 (Bruce and Starr 1985). This information has proven very useful and has been used to prioritize streams for the "Compensation Program". However, there have been major changes in the fish populations making a new inventory necessary.

The goals of the stream inventory program are to determine species distribution, relative abundance and to gather pertinent life history data. At the same time the program will evaluate habitat capabilities and identify and prioritize potential enhancement projects.

This report is intended as an information source only, with no discussion or conclusions drawn from said information. This report is utilized as an "appendix" to "Fisheries Resources & Enhancement Potentials of Selected Tributaries of the Williston Reservoir. Volume 1." An analysis of the fisheries resource values of each system is discussed in detail in volume 1.

A brief description of definitions, and methods employed is supplied. Although this material is also presented in volume 1, the methodology is repeated here in the the event volume 1 is not available to the reader. All data is presented in a summary format, followed by detailed, location specific data where appropriate. A key precedes each section of data to assist comprehension of the spreadsheets.

METHODS

The stream inventory program, and methodology applied, was designed by Peace Compensation Program fisheries biologist Brian Blackman.

Video Surveys and Mapping

Aerial reconnaissance videos were taken of selected streams flowing into Williston Reservoir during the summer of 1988. The video taped streams were assessed for spawning and rearing habitat (Retzer 1989). A total of 1561 kilometres or 59 tributaries are now on video. Biophysical maps showing fish distribution (from Bruce and Starr 1985) blockages, barriers, available reach and feature information have been completed. Reach length and slopes have been calculated from these Biophysical 1:50,000 NTS maps.

Maps of individual streams were created based on the 1:50,000 NTS biophysical maps. These individual system maps retained information from the Bruce and Starr 1975 studies. Where discrepancies occurred between the 1975 study observations and 1988-1991 studies, maps were updated to reflect the data obtained in 1988-1991. These changes present a more accurate assessment of the stream systems as they were arrived at through in depth ground surveys as opposed to the earlier studies which were highly dependant upon aerial surveys. Fish distribution from the 1975 studies is listed as believed to be present, confirmed species presence is reported only where fish were captured in the 1989 to 1991 investigations. New roads, bridges, and stream access points are indicated on the individual system maps. A key for the Aquatic Biophysical Map codes and symbols is provided in Appendix I.

Biophysical Surveys   Point, Reach and Detailed Surveys

Biophysical point and reach data has been collected according to the criteria outlined in the DFO/MOELP stream survey methodologies. Specifically the "Fish Habitat Inventory & Information Program".

The detailed biophysical inventory has been developed to address enhancement potential and evaluate possible limiting factors.

METHODS CONTINUED:

Biophysical Surveys (continued)

A combination of map interpretation, access, and the video reconnaissance, were employed to choose sites believed to be characteristic of the entire reach. Detailed surveys were then conducted on these representative sections of each reach. This data was then extrapolated to account for the entire reach. In some instances where the rearing characteristics of the reach were variable more than one section was sampled.

DEFINITION OF TERMS USED IN THE BIOPHYSICAL SURVEY:

LENGTH	the length of each habitat type measured in midstream to the nearest meter using an Eslon tape or rangefinder.
WETTED WIDTH	the average wetted width of each habitat type measured to the nearest meter using a tape or rangefinder. Where mid channel bars occur, the width of the bar is not included.
CHANNEL WIDTH	the average channel width, from rooted vegetation to rooted vegetation measured to the nearest meter.
SPAWNING HABITAT	an estimate of the percentage of the wetted area of the habitat type deemed suitable for spawning. Substrate size was given as s(small 1.6-4 cm),m(medium 4-6.4 cm), or l(large 6.5-12 cm) if one size class was dominant.
MEAN DEPTH	the average depth (visual estimate) in the habitat type as measured to the nearest 5 cm with a meter stick.
MAXIMUM DEPTH	the deepest area of the habitat type as measured with a meter stick (very deep pools were estimated).

METHODS CONTINUED;

DEFINITION OF TERMS USED IN THE BIOPHYSICAL SURVEY: (continued)

D-90	measured in cm as the mean diameter of the substrate which is larger than 90% of the substrate.
SLOPE	given as rise(cm) and run(m) as measured using an Abney level and tape.
INSTREAM COVER	The percentage of the area of the habitat type suitable for rearing salmonids ie. reasonable protection from predators, velocity, depth etc. this was in turn broken down into fry and parr rearing and adult holding habitat.
OVERSTREAM COVER	C/O C- crown cover, the percentage of the wetted area shaded during the day by vegetation over one meter above the water level, O- overhang the percentage of the wetted area with vegetation less than one meter above the water level.

HABITAT TYPE:

P pool	deep with limited surface turbulence, low velocity-primarily adult holding water, utilized by trout parr in the upstream portions and in areas with cover (debris jams, root wads etc.). Cover may be provided by depth alone, but this type of habitat is not heavily utilized for rearing.
G glide	shallow to medium in depth with little or no surface turbulence. Moderate in velocity - often spawning habitat, rearing is normally young of the year and usually associated with bank cover.

METHODS CONTINUED;

DEFINITION OF TERMS USED IN THE BIOPHYSICAL SURVEY: (continued)

HABITAT TYPE:

R riffle	shallow fast flowing with a broken surface - an area suitable for rearing parr where cover is provided by surface turbulence and boulders.
Rn run	deep fast flowing with a broken surface normally utilized by larger parr or adults - many pools contain short sections that could be classified as runs (at the head of the pool where a riffle enters) but these areas are not recorded as runs unless they constitute greater than 20% of the pool surface area.
Ca cascade	an area of fast turbulent water with vertical drops and small turbulent pockets.

Combinations of habitat types:

Often sections of stream fall into categories between habitat types. In these cases the types were grouped, for example, R-G is a habitat type which exhibits components of both a riffle and a glide, with slightly more riffle characteristics. In calculating the percent area of each habitat type, 60% would be classified as riffle, and 40% as glide.

METHODS CONTINUED:

CALCULATIONS

Length: the total length of the habitat unit types surveyed within a reach, (ie. pool 10 m, + riffle 5 m, + run 5 m, + pool 4 m = 24 m.)

Surface Area: the sum of the surface areas of each habitat unit.

Mean Wetted Width: the total surface area divided by the length.

Spawning Habitat: length x wetted width x %spawning habitat divided by 100.

Percent Habitat Type: surface area of each type divided by the total area x 100

The detailed surveys were conducted in such a manner that all personnel involved were making similar estimates where visual estimates were called for. Subjective decisions were minimal as all criteria outlined in the "Stream Survey Field Guide" were closely followed.

Snorkel Surveys:

Surveys were single pass swims (not replicated), conducted by experienced personnel. Swims were marked on the appropriate maps and the results were recorded. Size class and species of the fish were recorded. General observations were also recorded (water temp., benthos presence, areas of fish concentrations, etc.). After each swim the observers recorded their impressions of the capability of the area swam. These impressions were given numerical values from 1-5 ranging from nil to excellent with respect to spawning and rearing capabilities. Utilization was also ranked as 1= barren, 2=underseeded, 3=moderate, 4=optimal, 5= overseeded.

METHODS CONTINUED;

Snorkel Surveys: (continued)

Underwater visibility was recorded twice for each swim.

1) At the end of each swim, the observers estimated the percentage of the area covered.

2) Wetted visibility was measured as the distance in any one direction a swimmer could clearly identify fish species, and length. The following formula was utilized to determine the percentage of the area covered.

((wetted visibility x 2) x number of swimmers/mean wetted width)/100

Wetted visibility was multiplied by 2 as a swimmer could observe fish in two directions, to the left and right.

Certain river features, falls, debris jams, braiding, etc., would render the physical measuring method (method 2) inaccurate. In these cases the subjective rating method (method 1) was a better estimate. When the two estimates disagreed the swimmers estimates (method 1) were accepted as the most accurate.

The estimated number of fish per kilometre was estimated by:

((total observed x 100)/% covered) /length of the swim (km.)

METHODS CONTINUED;

Electrofishing:

The prime objective of the electrofishing was to collect samples for age and growth and to determine species distribution and relative abundance.

The initial program was designed to use ("Zippen method")stop nets to enclose the site and make three passes to estimate the population (Zippen 1958). However, because of the very low densities the stop net and three pass methods were abandoned (mean site "densities" for rainbow and bull trout were 0.038 and 0.026 per square meter and ten or fewer trout (rainbow + bull) were captured in twenty one of the thirty nine sites surveyed in 1989). A single pass (no stop nets) method was employed to obtain samples.

Many of the streams were too large and deep to sample the entire width, in these systems electrofishing was confined to the stream perimeter. Density and biomass estimates have been given in the summary tables, however these should only be used to compare relative abundance and are not intended as absolute values. Density and biomass were calculated as;

Density = # of fish captured / area electrofished (m.^{2})

Biomass = Density x Mean fish weight (g.)

Adult Age Data:

Adult age data was collected through angling, and a 1989 fence operation at Dunlevy Creek. Structures utilized for age determination of captured fish included, scales, fin rays, and otoliths. Most of the adult fish captured in 1991 were Floy tagged and released. Life histories and growth rates will hopefully become available for individual systems as tag returns occur.

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LIST OF STREAMS SURVEYED

Akie
Blackwater
Bruin
Carbon
Carmella (alias) -trib. of Manson River
Chichouyenily
Chowika
Clearwater
Collins
Cutthumb
Davis
Donna -trib. of Manson River
Dresser -trib. of Dunlevy Creek
Ducette
Dunlevy
Emerslund -trib. of Emerslund Creek
Gaffney -trib. of Manson River
Lafferty
McAllister -trib. of Carbon Creek
Macoun -trib. of Clearwater Creek
Manson
Mesilinka
Misinchinka
Mugaha
Munro -trib. of Manson River
Nabesche
Nation
Pesika
Philip -trib. of Nation River
Schooler
Scott
Sixmile
Weston
Winn (alias) -trib. of Manson River

*NOTE- data is limited for some of the streams listed, the level of data collected varies for each system.

STUDY AREA MAPS

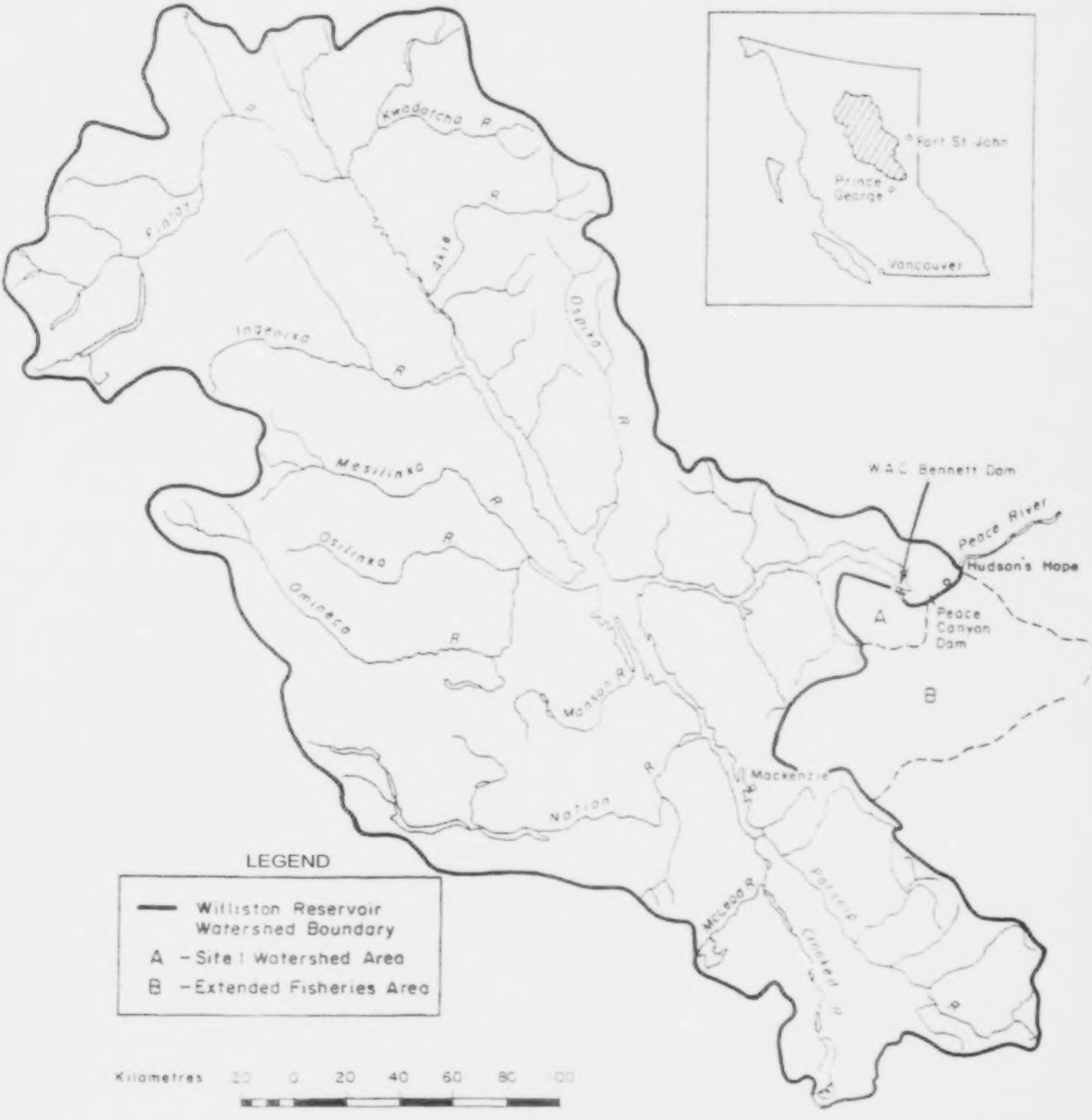
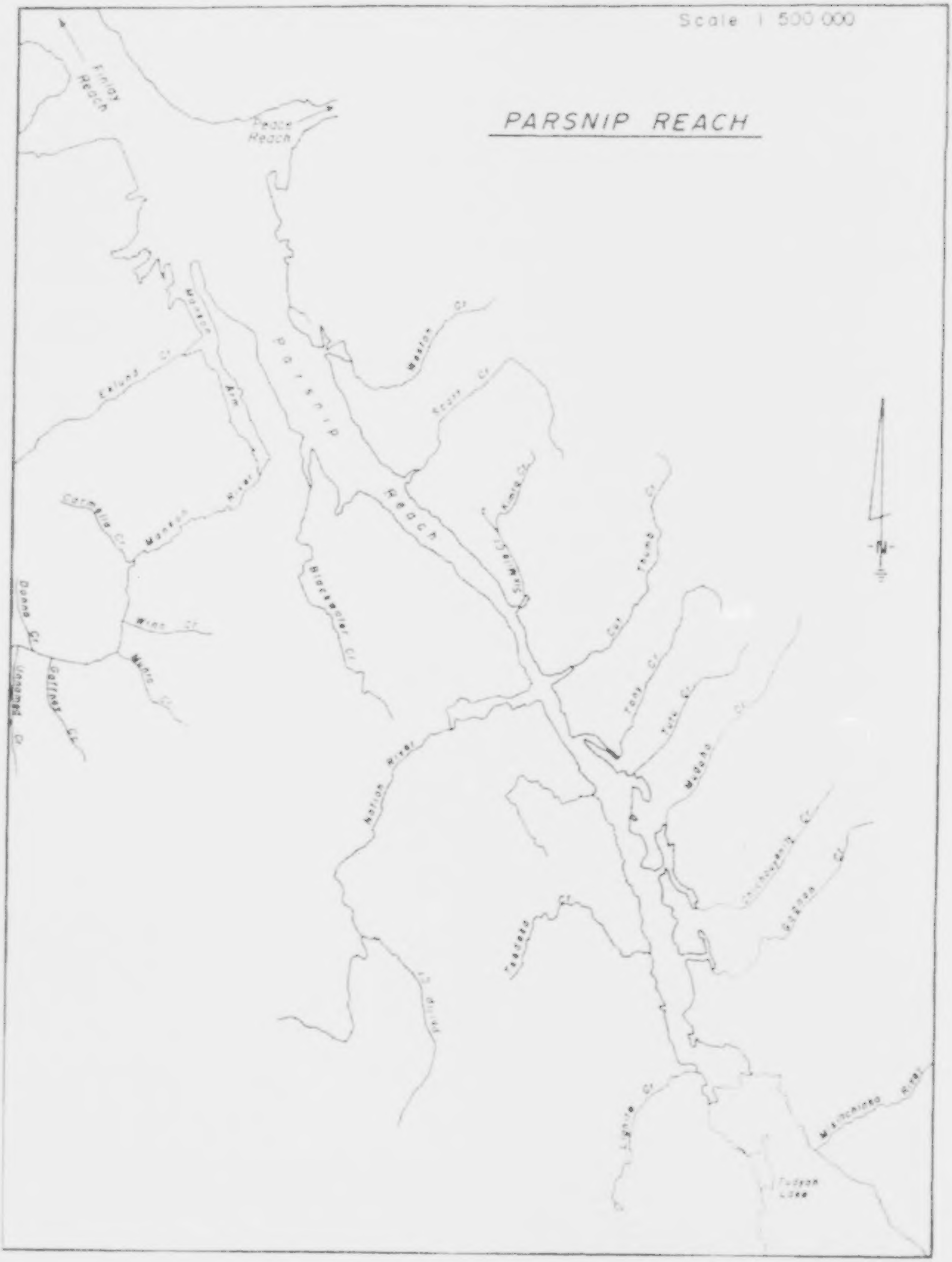
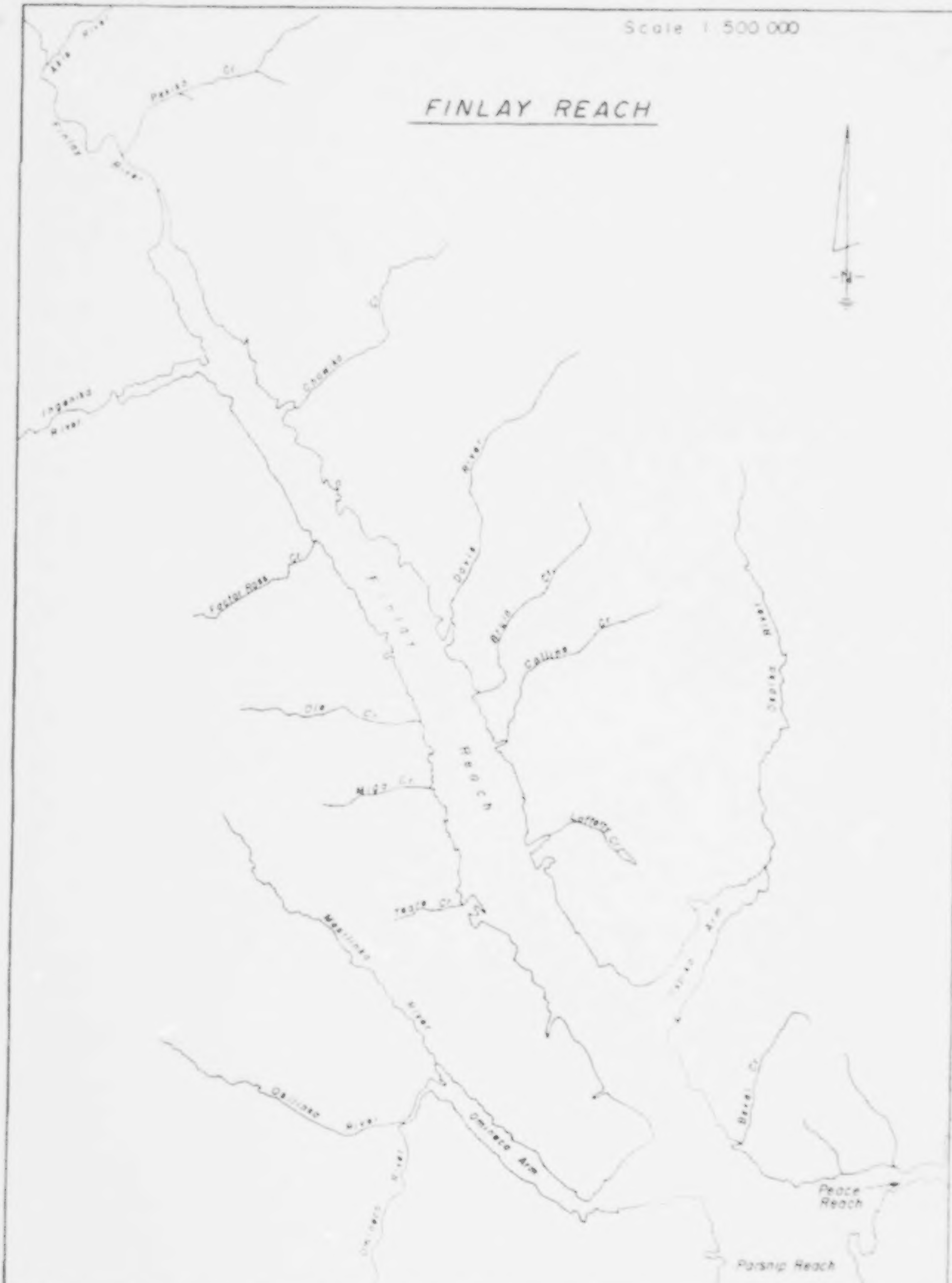
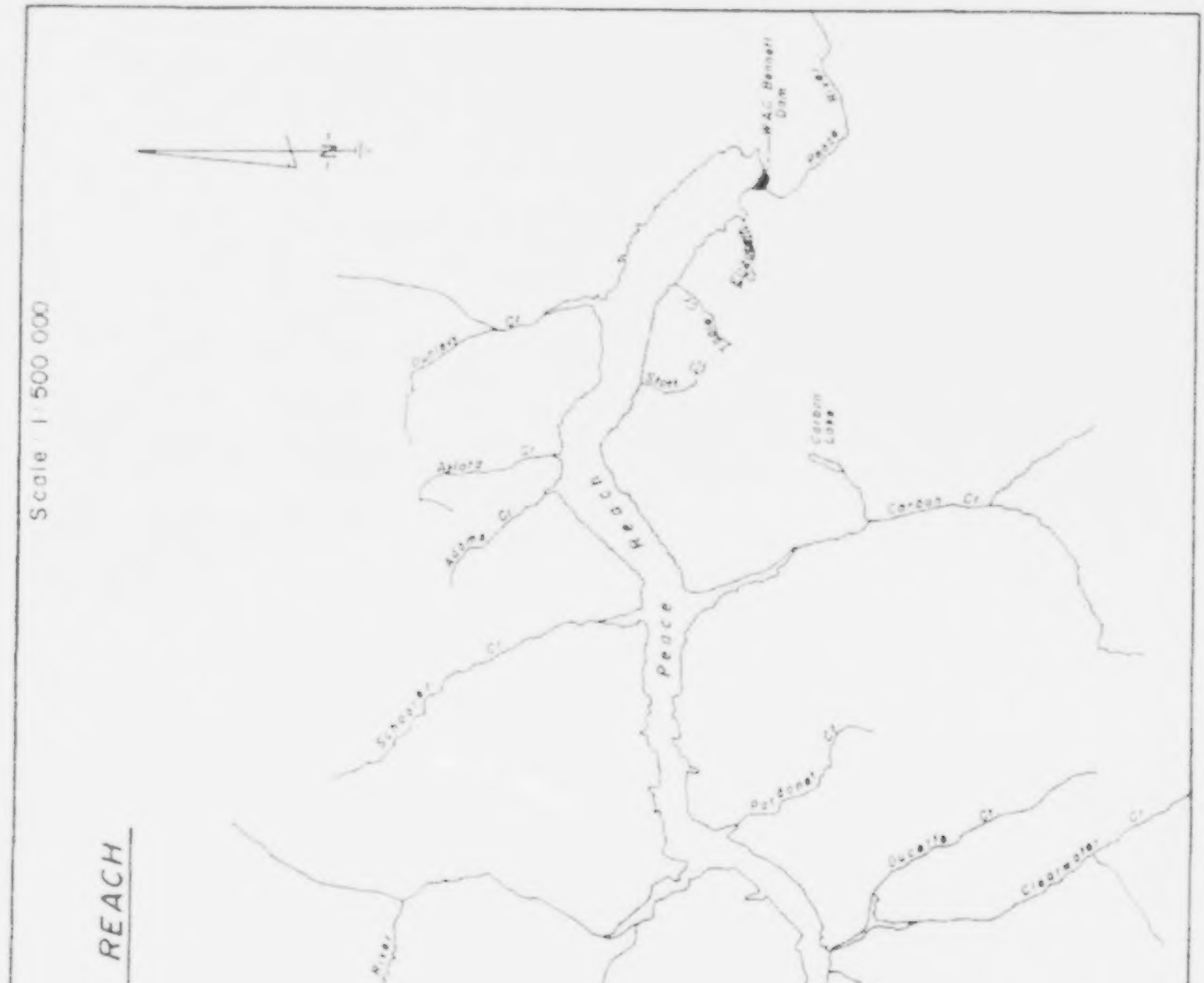

Kwadacha R
Finlay
Akie R
R
Ospika R
Ingenika R
Mesilinka R
Osilinka R
Omineca R
Manson R
Nation R
Mackenzie
McLeod R
Parsnip
Crooked R
R
W.A.C. Bennett Dam
Peace River
Hudson's Hope
A
Peace Canyon Dam
B
Fort St John
Prince George
Vancouver
LEGEND
Williston Reservoir Watershed Boundary
A - Site 1 Watershed Area
B - Extended Fisheries Area
Kilometres 20 0 20 40 60 80 100

Figure 1. Williston Reservoir Watershed

Scale 1 500 000
PARSNIP REACH
Finlay Reach
Peace Reach
Manson Arm
Parsnip Reach
Weston Cr
Scott Cr
Eklund Cr
Carmella Cr
Manson River
Blackwater Cr
Kimta Cr
Six Mile Cr
Cut Thumb Cr
Donna Cr
Winn Cr
Munro Cr
Unnamed Cr
Gaffney Cr
Nation River
Tony Cr
Tutu Cr
Mugaha Cr
Chichouyenily Cr
Taadada Cr
Lignite Cr
Misinchinka River
Tudyah Lake
N


Scale 1:500 000
FINLAY REACH
N
Akie River
Pesika Cr.
Finlay River
Chowika Cr.
Ingenika River
Factor Ross Cr.
Davis River
Braid Cr.
Collins Cr.
Finlay Reach
Ole Cr.
Nig Cr.
Ospika River
Lafferty Cr.
Teare Cr.
Ospika Arm
Mesilinka River
Osilinka River
Omineca Arm
Omineca River
Bevel Cr.
Peace Reach
Parsnip Reach


PEACE REACH

Scale 1:500 000
N
W.A.C. Bennett Dam
Peace River
Peace Reach
Dunlevy Cr.
Aylard Cr.
Adams Cr.
Schooler Cr.
Scott Cr.
Carbon Lake
Carbon Cr.
Nabesche River
West Nabesche River
Bernard Cr.
Ducette Cr.
Clearwater Cr.
Selwyn Cr.
Wicked River
Cabin Cr.
Bear Cabin Cr.
Finlay Bay
Finlay Reach
Parsnip Reach
Manson Arm

Legend

[-	End or beginning of video survey.
W-	A major bank or valley side wall slope zone (typically glacial till eroding banks)
X-	Persistent debris accumulation (log and debris jams)
⟼ R#-	Reach boundary and number. Number is placed at upstream reach boundary.
*-	General zone of flood and side channels.
≍-	Bridge.
—[16R-	Site - specific channel features are symbolized as follows: R (Rock) Bd (Beaver Dam) L (Logs) C (Cascade/Chute) Heights (m) if available, are indicated as numbers before symbols, (e.g. 3R = 3 m rock falls). Length (m) is indicated as a number after the symbol, (e.g. C50 = 50 m long cascade/chute).
⊥-	Swamp or marsh area.

Reach Symbol example

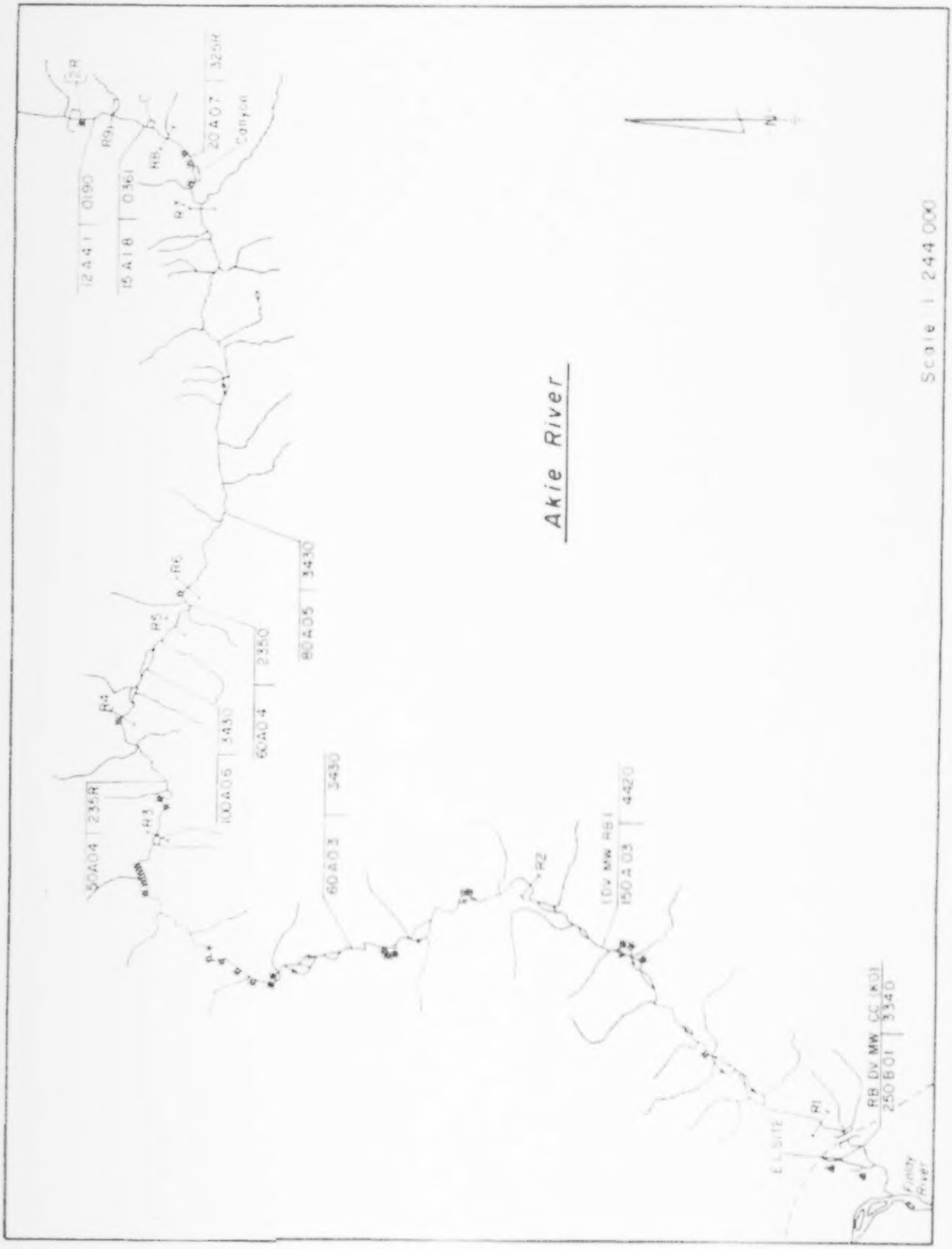
Rb (DV) —— Fish species present, ( ) denote species presence probable.

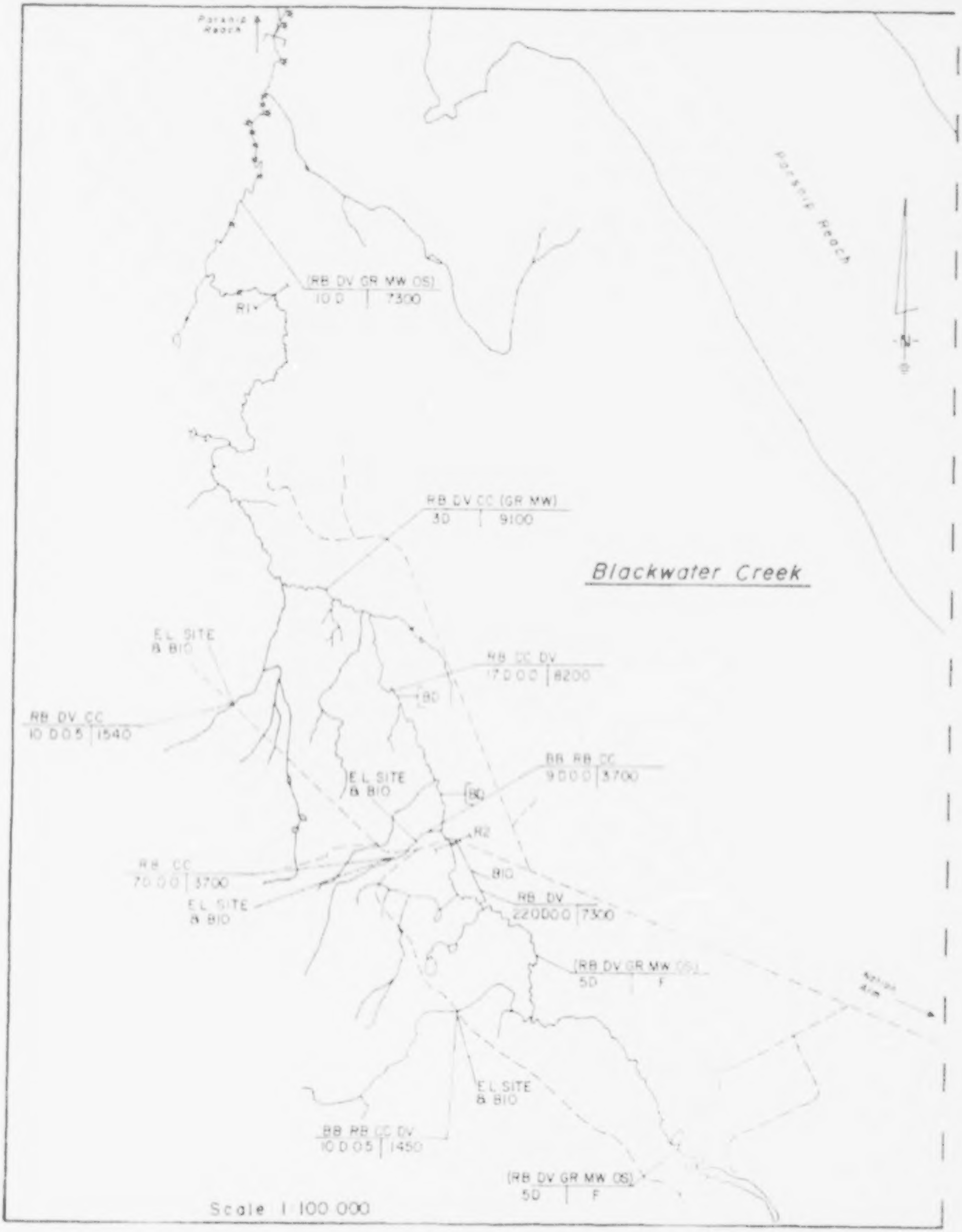
9A0.7 | 0280 —— Bed (Substrate) Materials.

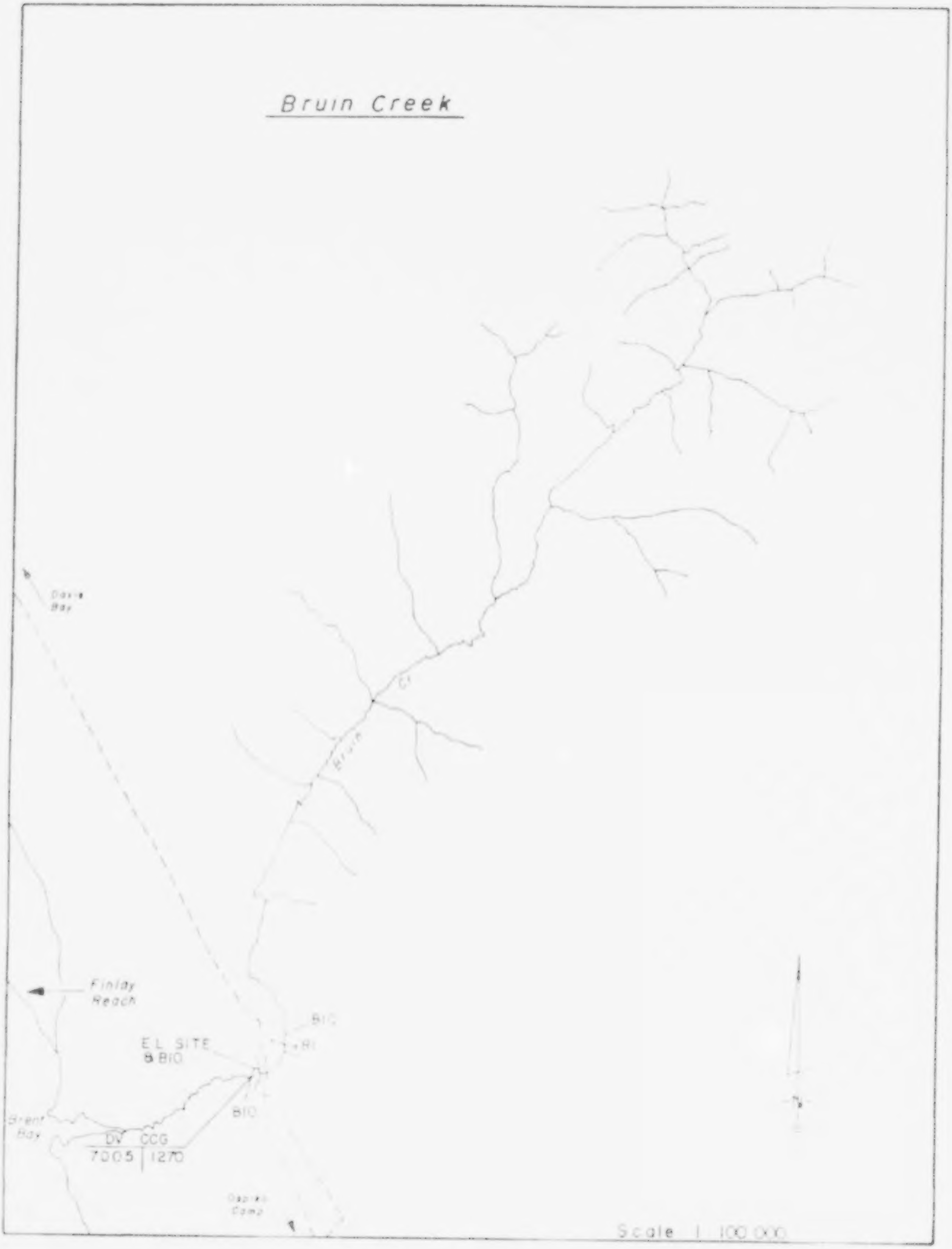
Fines (0%) materials in the 0 - 2 mm size class.
Gravels (20%) materials in the 2 - 64 mm size class.
Larges (80%) materials greater than 64 mm.
Bedrock (0%) consolidated materials.

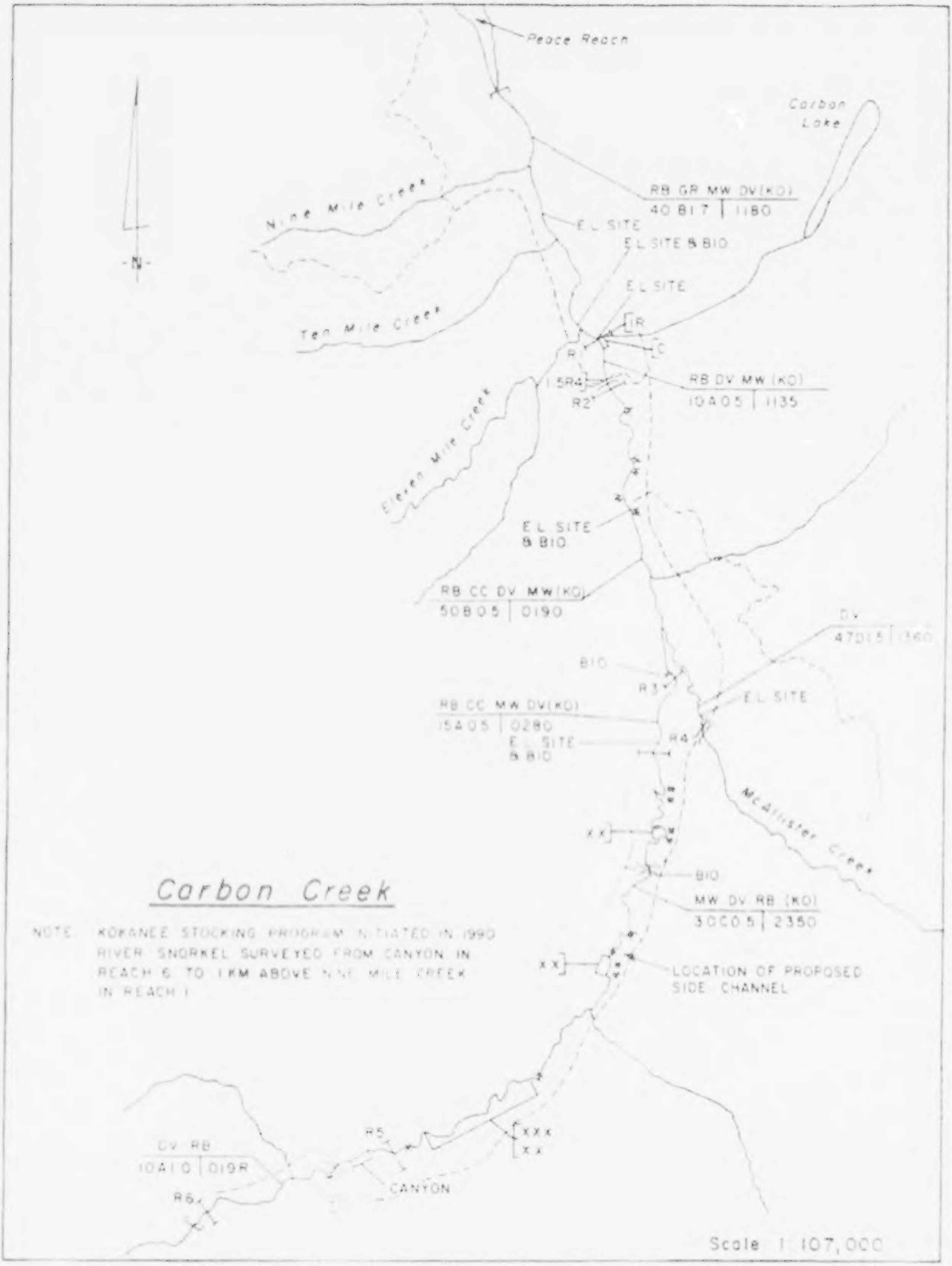
Channel Components
Channel width (m) = 9 m
The ratio between width of valley flat and width of channel = A
- A rated 0 - 2
- B rated 2 - 5
- C rated 5 - 10
- D rated 10+
- E rated N/A (e.g. fan or delta)

Slope (stream gradient) = 0.7 %


Akie River
Scale 1:244 000
N
12A41 | 0190
15A18 | 0361
20A07 | 325R
Canyon
12R
C
R9
R8
R7
R6
R5
R4
R3
R2
R1
80A05 | 3430
60A04 | 2350
100A06 | 3430
50A04 | 235R
60A03 | 3430
10V MW RB1
150A03 | 4420
RB DV MW CC K01
250B01 | 3340
E.L. SITE
Finlay River


Parsnip Reach
(RB DV GR MW OS)
10 D | 7300
R1
Parsnip Reach
N
RB DV CC (GR MW)
3D | 9100
Blackwater Creek
E L SITE
& BIO
RB CC DV
17 D 0 0 | 8200
BD
RB DV CC
10 D 0.5 | 1540
BB RB CC
9 D 0 0 | 3700
E L SITE
& BIO
BD
R2
RB CC
7 D 0 0 | 3700
BIO
E L SITE
& BIO
RB DV
22 D 0 0 0 | 7300
(RB DV GR MW OS)
5D | F
E L SITE
& BIO
BB RB CC DV
10 D 0 5 | 1450
(RB DV GR MW OS)
5D | F
Scale 1:100 000

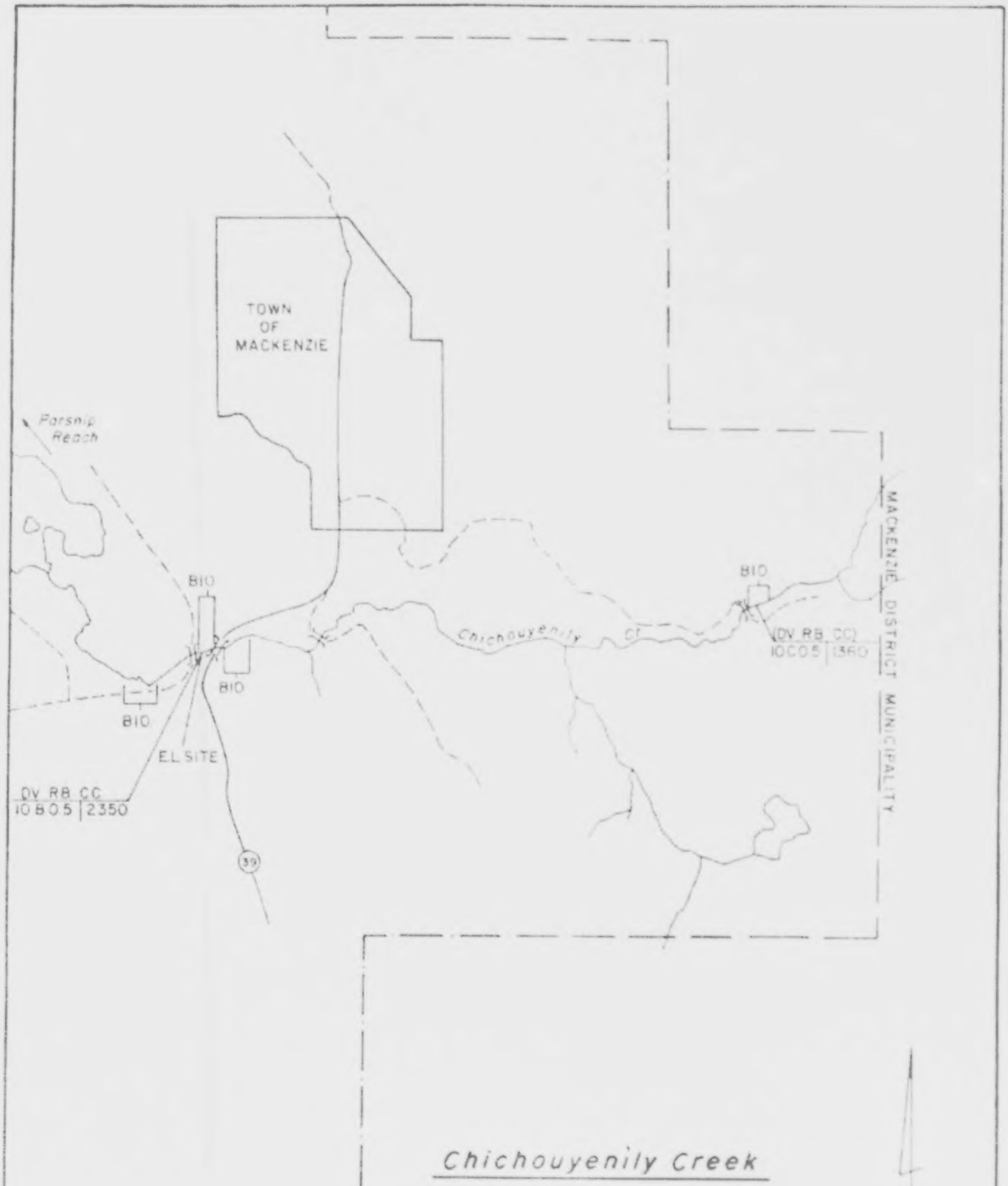

Bruin Creek
Davis Bay
Bruin Cr.
Finlay Reach
BIO
E.L. SITE & BIO
RI
BIO
Brent Bay
DV CCG
7005 | 1270
Osprey Camp
Scale 1 : 100 000



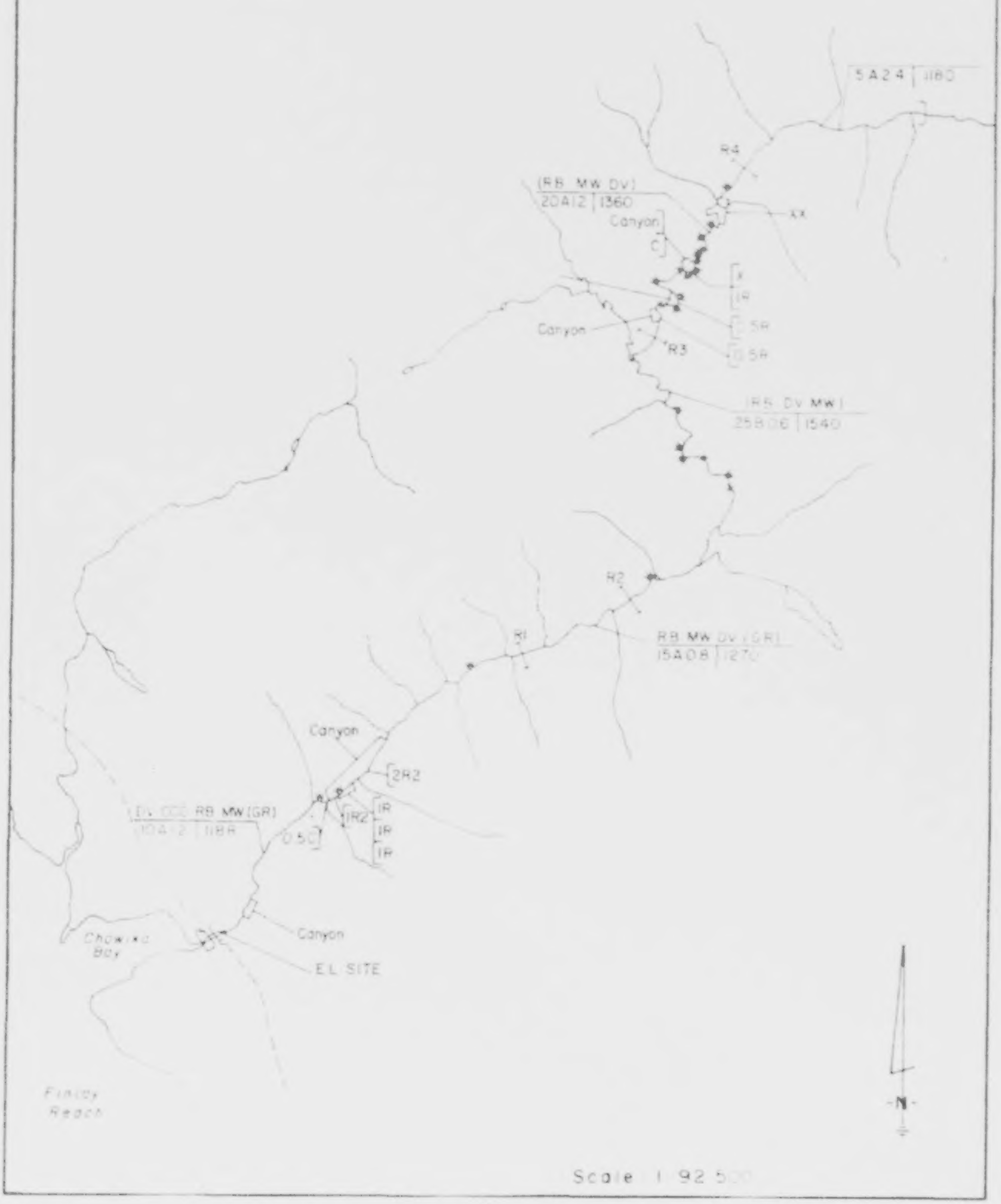
Peace Reach
Carbon Lake
N
Nine Mile Creek
Ten Mile Creek
Eleven Mile Creek
McAllister Creek
RB GR MW DV(KO)
40 B1 7 | 1180
E.L. SITE
E.L. SITE & BIO
E.L. SITE
IR
C
R1
1.5R4
R2
RB DV MW (KO)
10A05 | 1135
E.L. SITE & BIO
RB CC DV MW(KO)
50B05 | 0190
DV
47D15 | 1360
BIO
R3
E.L. SITE
RB CC MW DV(KO)
15A05 | 0280
E.L. SITE & BIO
R4
X X
BIO
MW DV RB (KO)
30C05 | 2350
X X
LOCATION OF PROPOSED SIDE CHANNEL
XXX
XX
R5
DV RB
10A10 | 019R
R6
CANYON
Scale 1:107,000

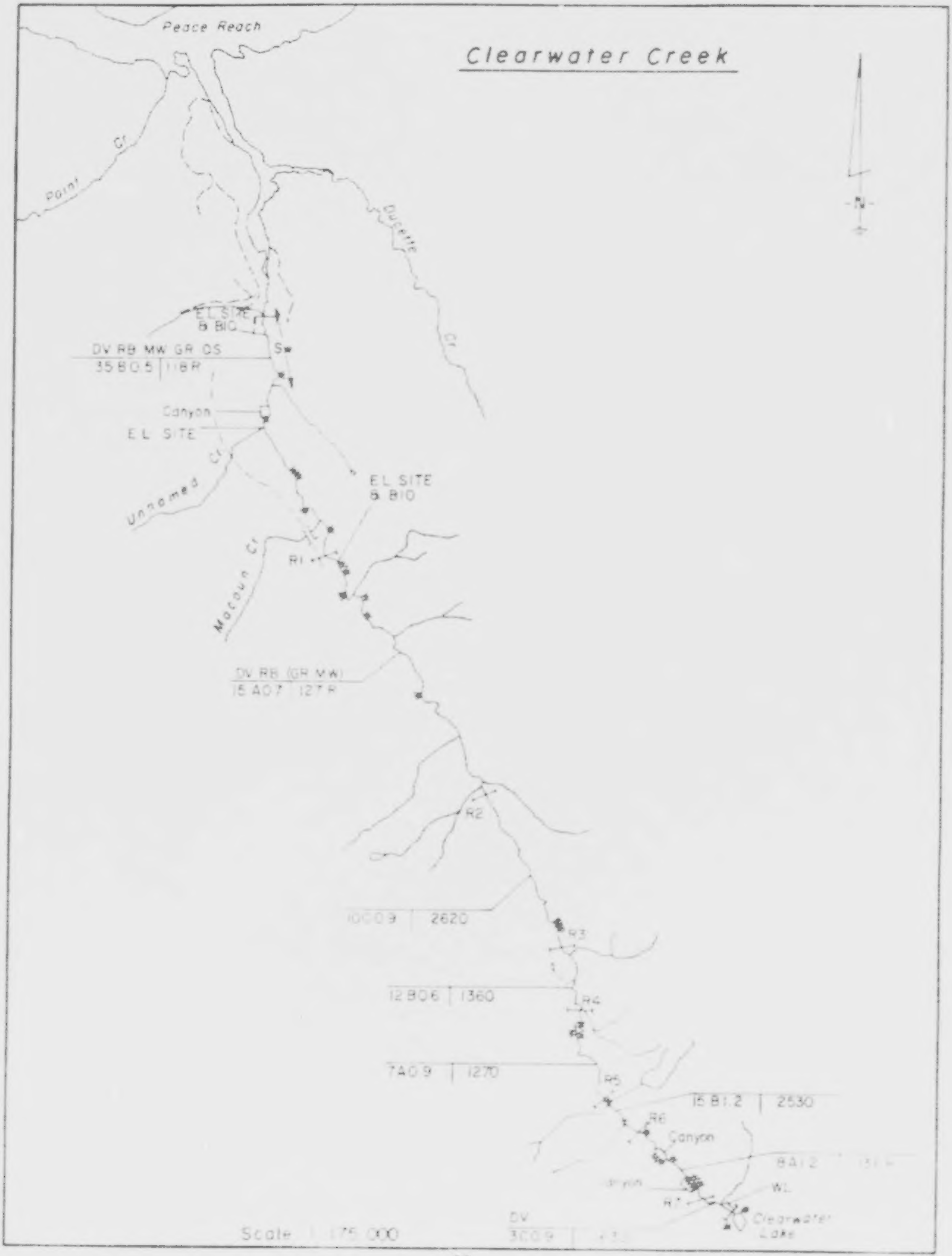
Carbon Creek

NOTE: KOKANEE STOCKING PROGRAM INITIATED IN 1990
RIVER SNORKEL SURVEYED FROM CANYON IN
REACH 6 TO 1 KM ABOVE NINE MILE CREEK
IN REACH 1

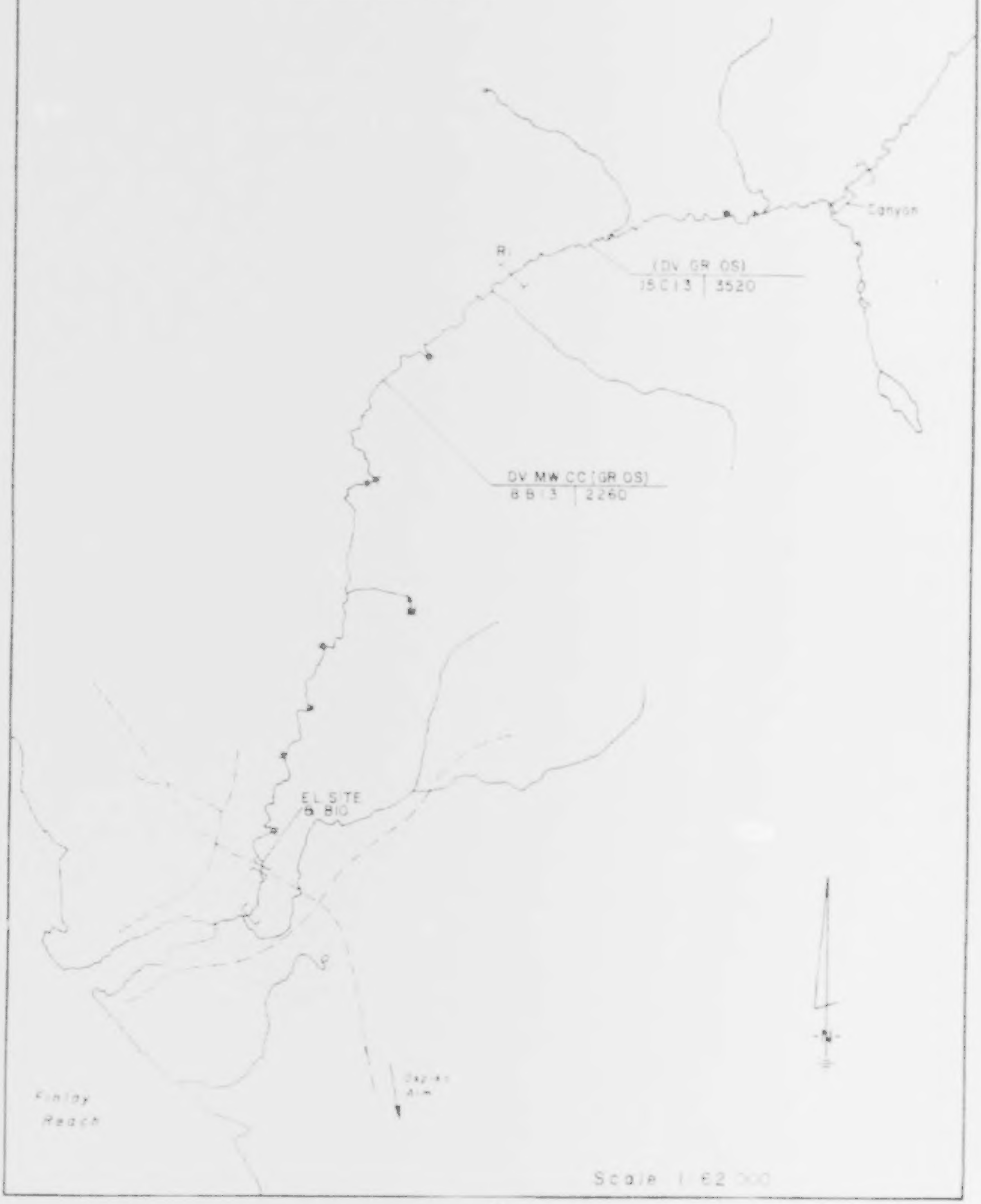

TOWN OF MACKENZIE
Parsnip Reach
BIO
BIO
BIO
BIO
E.L. SITE
DV RB CC
10 B0.5 | 2350
39
Chichouyenily Cr
BIO
DV RB CC
10C0.5 | 1360
MACKENZIE DISTRICT MUNICIPALITY
Chichouyenily Creek
N
Scale 1:50 000

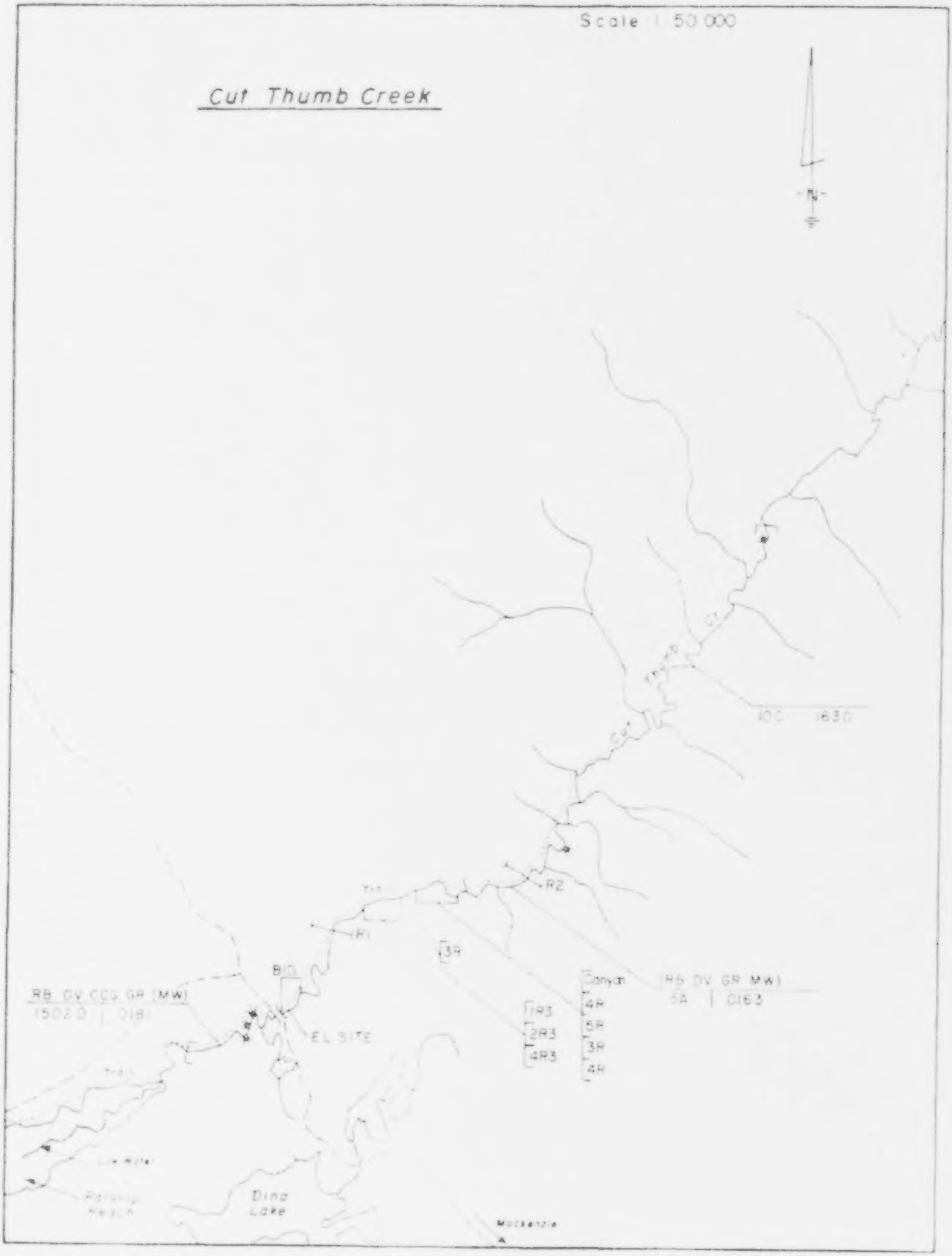
Chowika Creek


5A24 | 1180
R4
(RB MW DV)
20A12 | 1360
Canyon
C
XX
X
1R
0.5R
0.5R
Canyon
R3
(RB DV MW)
25B06 | 1540
R2
R1
RB MW DV (GR)
15A08 | 1270
Canyon
2R2
DV OCC RB MW (GR)
10A12 | 1188
1R2
1R
1R
1R
0.5C
Canyon
E.L. SITE
Chowika Bay
Finlay Reach
N
Scale 1:92 500

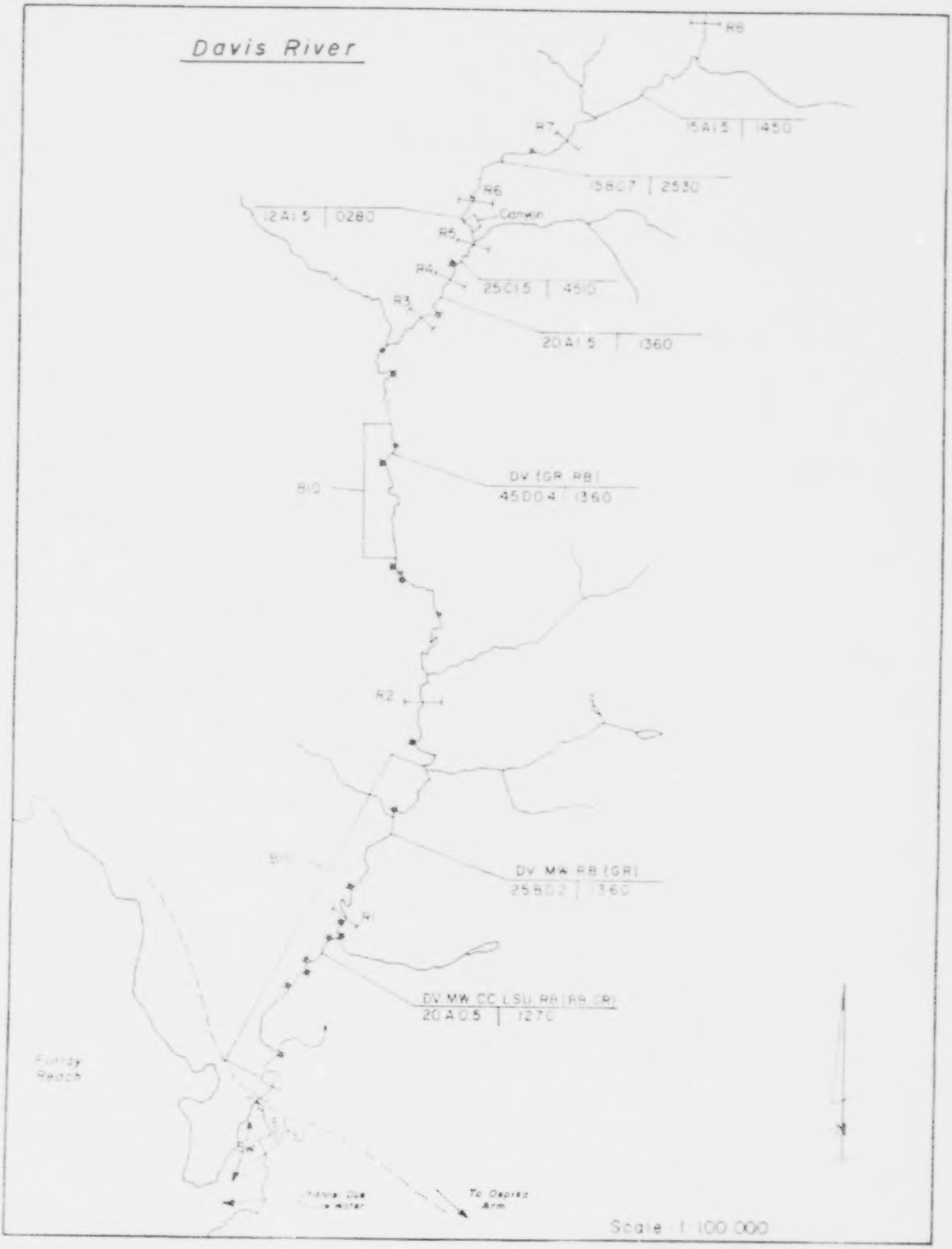

Clearwater Creek
Peace Reach
Point Cr.
Dusette Cr.
N
E.L. SITE
& BIO
DV RB MW GR DS
35 BO.5 | 118 R
S
Canyon
E.L. SITE
Unnamed Cr.
E.L. SITE
& BIO
Macoun Cr.
R1
DV RB (GR MW)
15 AO.7 | 127 R
R2
10 CO.9 | 2620
R3
12 BO.6 | 1360
R4
7 AO.9 | 1270
R5
15 B1.2 | 2530
R6
Canyon
8 A1.2
Canyon
R7
WL
Clearwater
Lake
DV
3 CO.9
Scale 1:175,000

Collins Creek

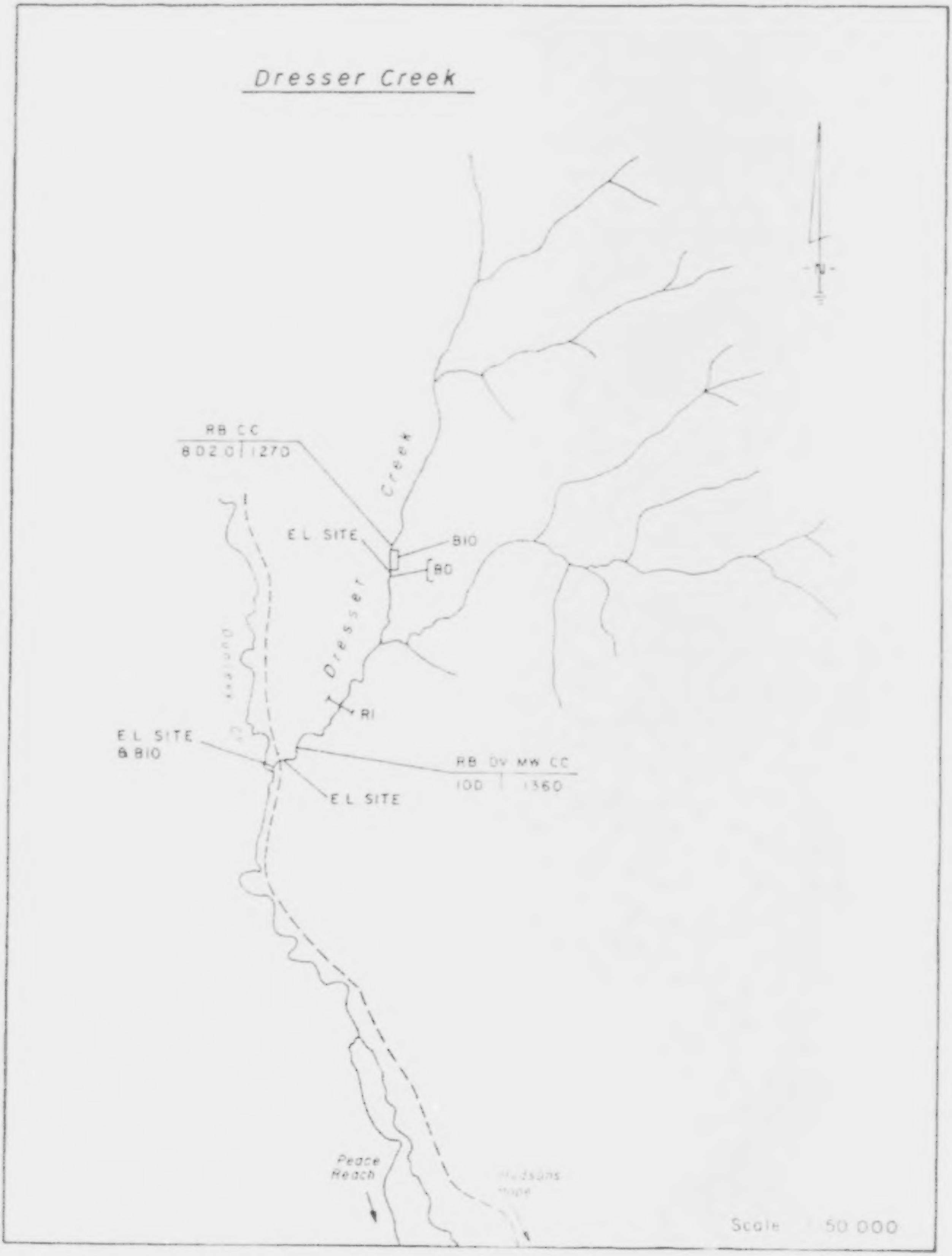

R1
(DV GR OS)
15 C 13 | 3520
Canyon
DV MW CC (GR OS)
8 B 13 | 2260
EL SITE
& BIO
Finlay
Reach
Ospika
Arm
N
Scale 1 : 62 500

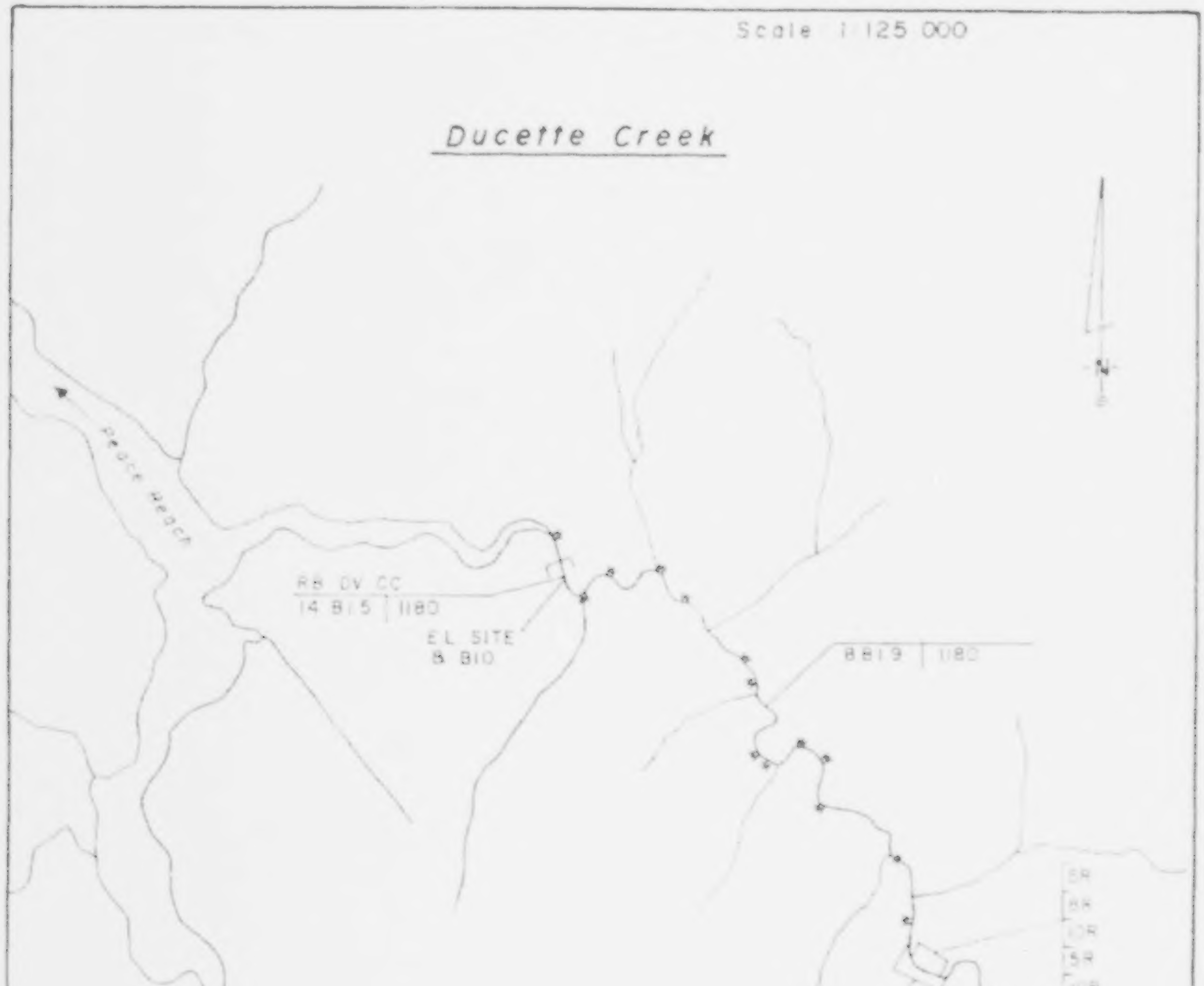

Cut Thumb Creek

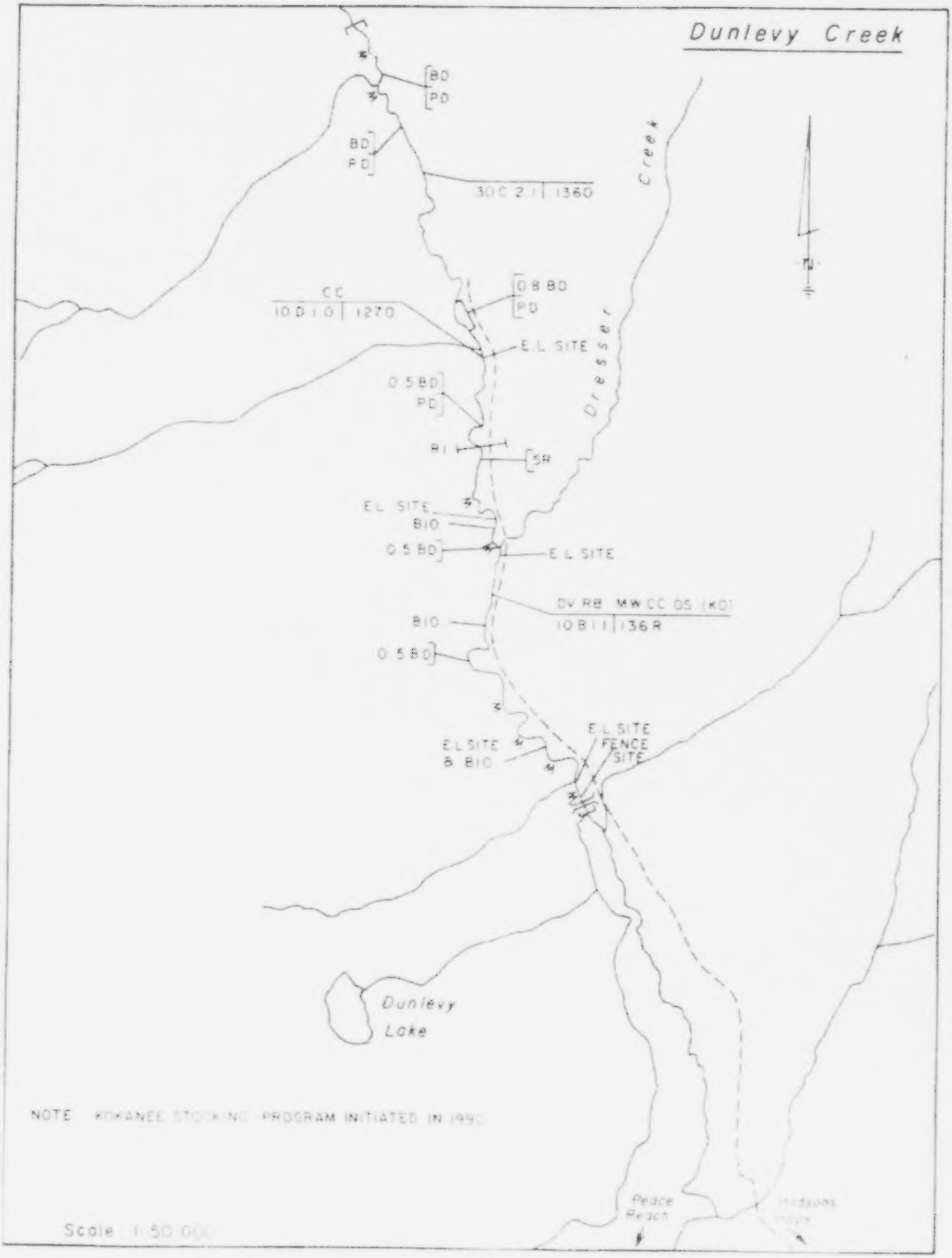
Scale 1 50 000
N
Thumb Cr
Cr
100 1630
R2
Trail
R1
3R
B10
RB DV CCG GR (MW)
1502.0 | 0181
EL SITE
Canyon
(RB DV GR MW)
5A | 0163
4R
5R
3R
4R
1R3
2R3
4R3
Trail
Low Water
Parsnip Reach
Dina Lake
Mackenzie

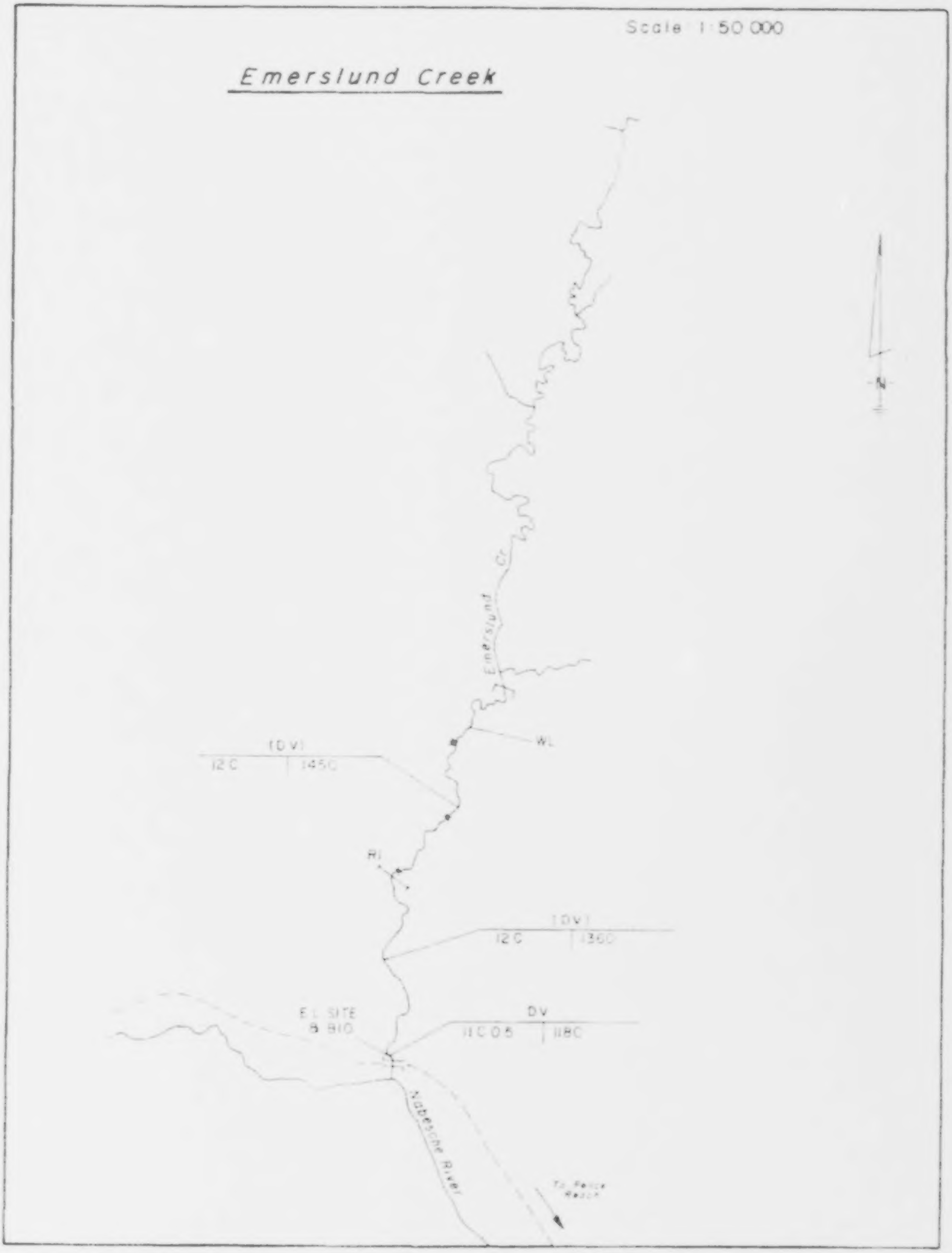

Davis River
R8
15A1.5 | 1450
R7
15B07 | 2530
R6
12A1.5 | 0280
Canyon
R5
R4
25C1.5 | 4510
R3
20A1.5 | 1360
B10
DV (GR RB)
45D0.4 | 1360
R2
B11
DV MW RB (GR)
25B02 | 1360
R1
DV MW CC LSU RB (RB GR)
20A0.5 | 1270
Finlay Reach
SW
To Ospika Arm
Scale 1:100,000

Dresser Creek


N
RB CC
8 02.0 | 1270
Creek
E.L. SITE
BIO
BO
Dresser
Dunlevy Cr.
RI
E.L. SITE
& BIO
RB DV MW CC
100 | 1360
E.L. SITE
Peace Reach
Hudsons Hope
Scale 1:50 000

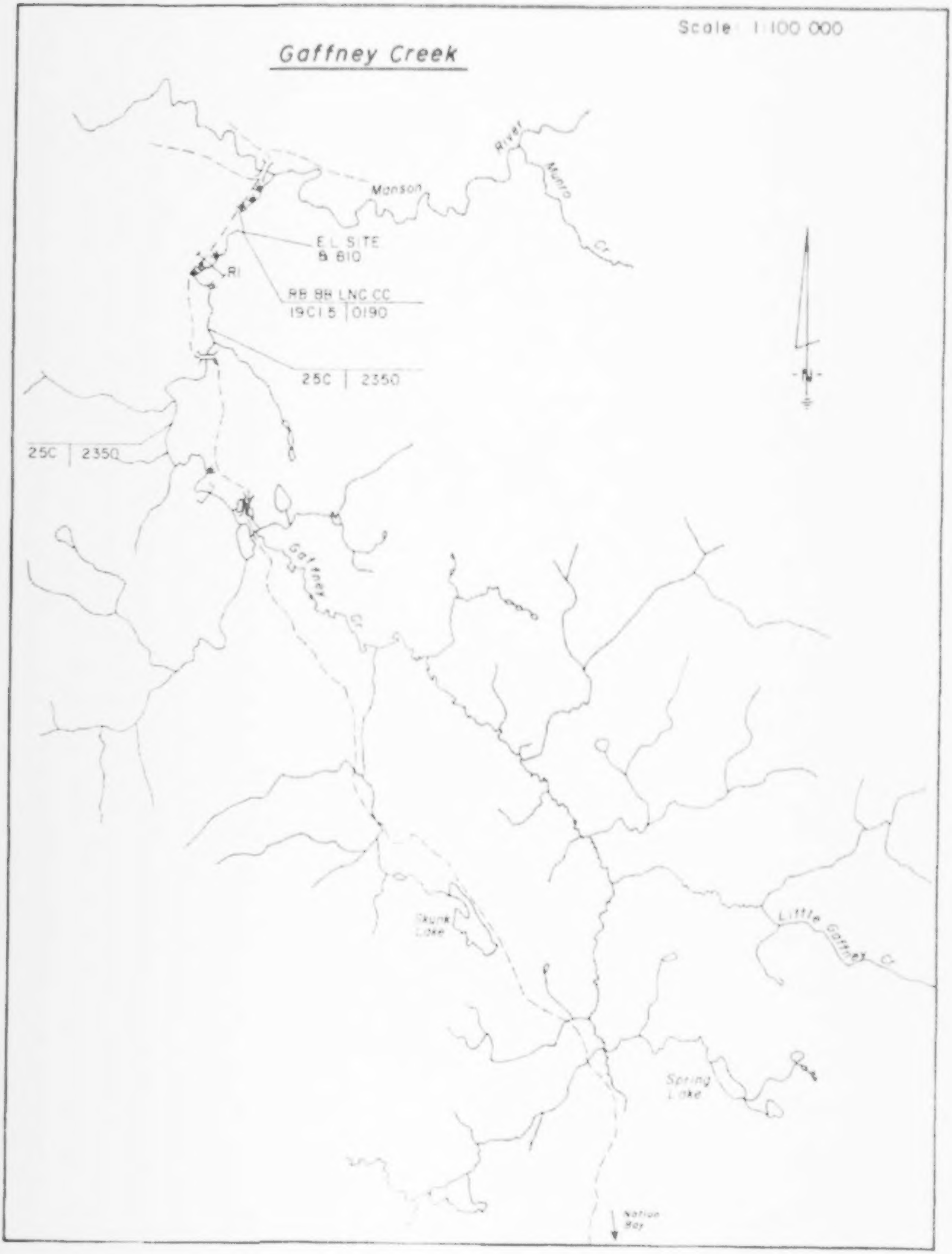

Scale 1:125 000
Ducette Creek
N
Peace Reach
RB DV CC
14 815 | 1180
E.L. SITE
& BIO
8819 | 1180
5R
8R
10R
15R
10R
Canyon
Clearwater
Cr.

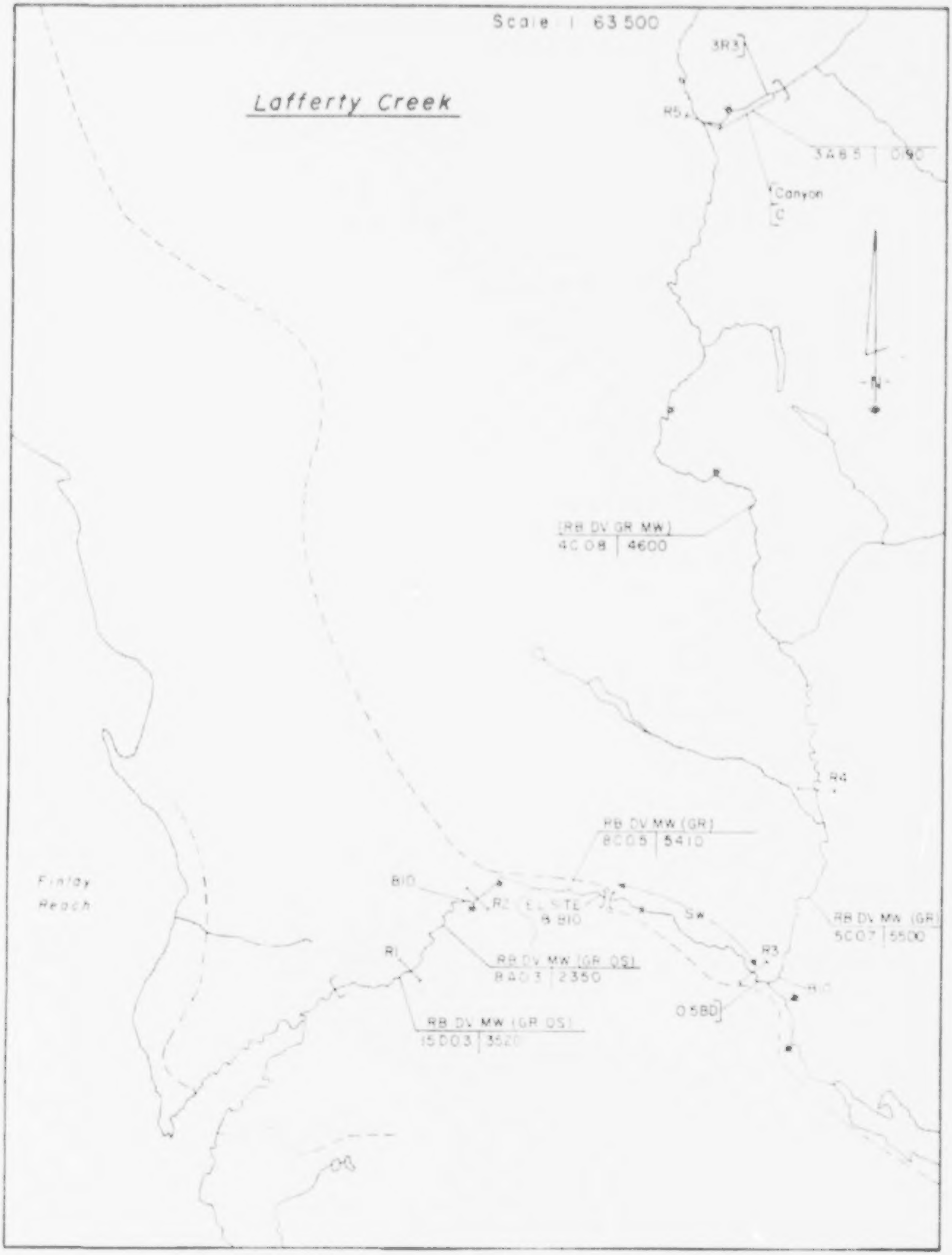

Dunlevy Creek
BD
PD
BD
PD
30C 2.1 | 1360
Creek
Dresser
N
CC
10 D 1.0 | 1270
0.8 BD
PD
E.L. SITE
0.5 BD
PD
R1
5R
E.L. SITE
BIO
0.5 BD
E.L. SITE
DV RB MW CC DS (KO)
10 B 1.1 | 136 R
BIO
0.5 BD
E.L SITE
& BIO
E.L SITE
FENCE
SITE
Dunlevy
Lake
NOTE: KOKANEE STOCKING PROGRAM INITIATED IN 1990
Scale 1:50 000
Peace
Reach
Hudsons
Hope

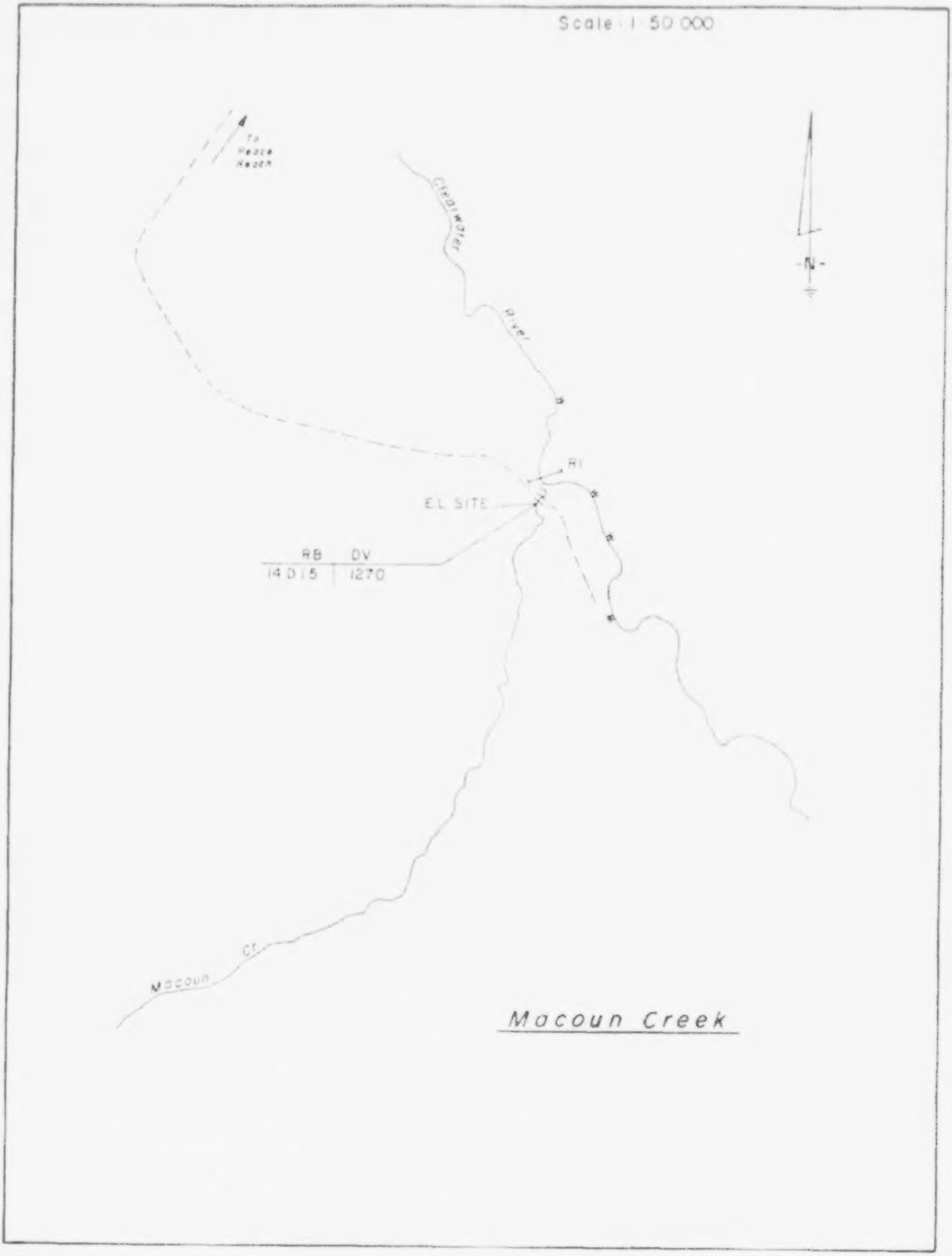


Emerslund Creek

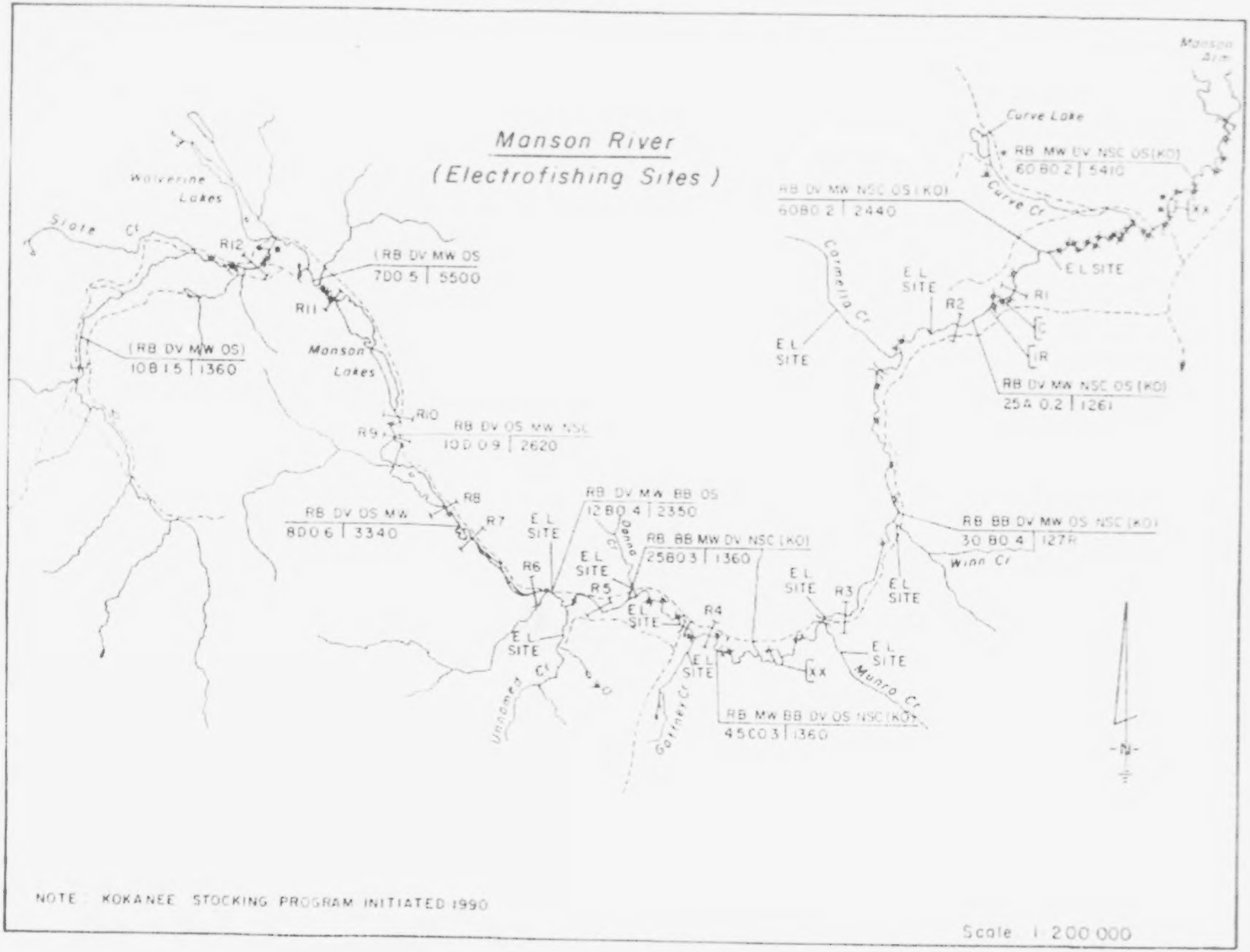
Scale 1:50 000
N
Emerslund Cr.
WL
(DV)
12 C
145 C
RI
(DV)
12 C
136 C
E.L. SITE
B BIO
DV
11 C 0.5
118 C
Nabesche River
To Peace Reach


Gaffney Creek
Scale 1:100 000
Manson
River
Munro
Cr.
E.L. SITE
B 610
RI
RB BB LNC CC
19C15 | 0190
25C | 2350
25C | 2350
N
Gaffney
Cr.
Skunk Lake
Little Gaffney Cr.
Spring Lake
Nation Bay


Scale 1:63 500
Lafferty Creek
3R3
R5
3A85 | 0190
Canyon
C
N
(RB DV GR MW)
4C08 | 4600
R4
RB DV MW (GR)
8C05 | 5410
Finlay
Reach
B10
R2
EL SITE
B B10
Sw
RB DV MW (GR)
5C07 | 5500
R3
R1
RB DV MW (GR OS)
8A03 | 2350
B10
05BD
RB DV MW (GR OS)
15D03 | 3520
08


Scale 1:50 000
To Peace Reach
Clearwater River
-N-
R1
E.L. SITE
RB | DV
14 D 15 | 1270
Macoun Cr.

Macoun Creek



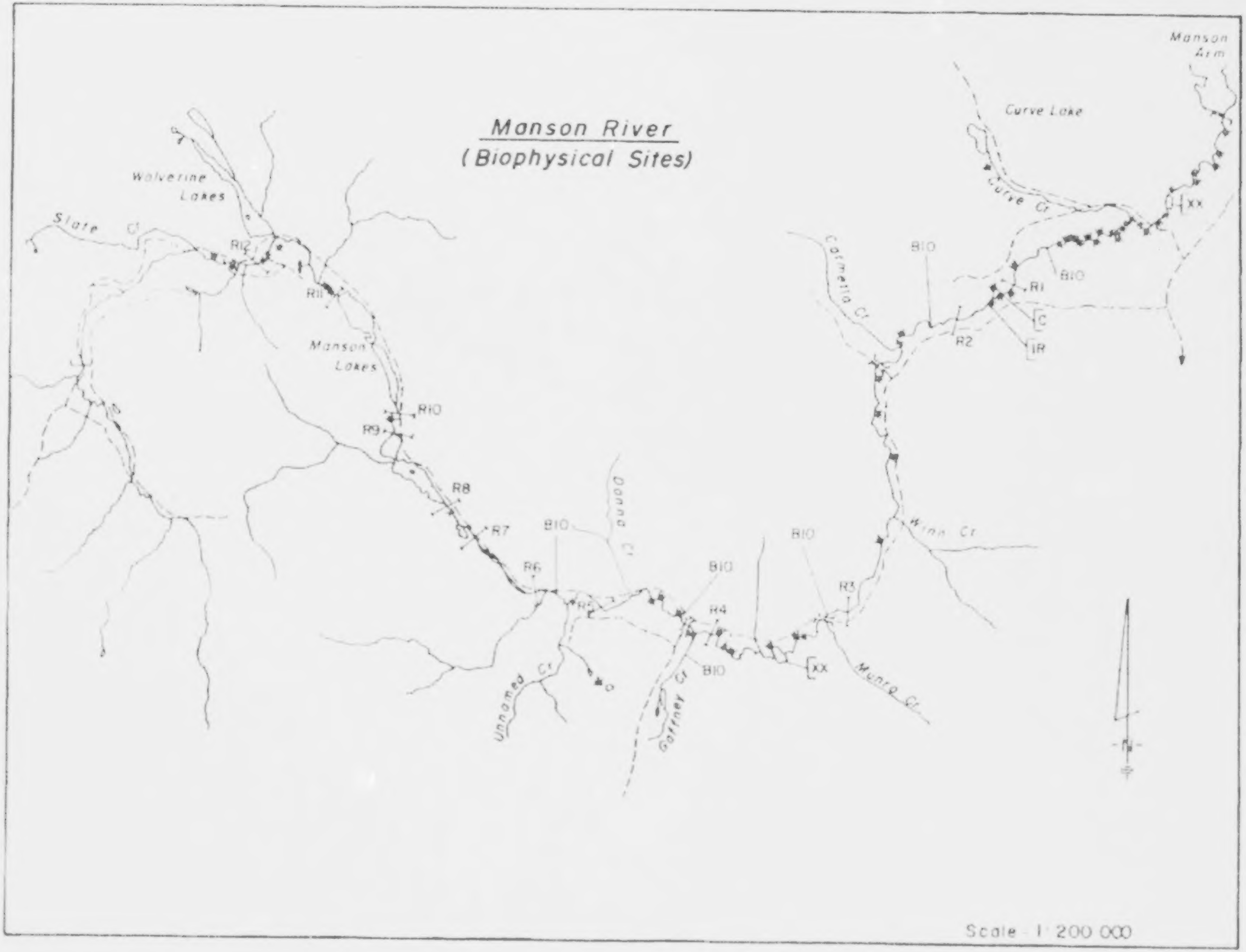
Manson River

(Electrofishing Sites)

Manson Arm
Curve Lake
Curve Cr
RB MW DV NSC OS(KO)
60 BO 2 | 5410
RB DV MW NSC OS(KO)
60 BO 2 | 2440
XX
E L SITE
Carmelia Cr
E L SITE
R2
R1
C
R
RB DV MW NSC OS (KO)
25 A 0.2 | 1261
Wolverine Lakes
Slate Cr
R12
(RB DV MW OS
700 5 | 5500
R11
(RB DV MW OS)
10 B 1.5 | 1360
Manson Lakes
R10
R9
RB DV OS MW NSC
10 D 0.9 | 2620
R8
R7
RB DV OS MW
8 D 0.6 | 3340
RB DV MW BB OS
12 BO 4 | 2350
Donna Cr
RB BB MW DV NSC (KO)
25 BO 3 | 1360
RB BB DV MW OS NSC (KO)
30 BO 4 | 1278
Winn Cr
R6
R5
R4
R3
E L SITE
Unnamed Cr
Gaffney Cr
XX
Munro Cr
RB MW BB DV OS NSC (KO)
45 C 0.3 | 1360
N

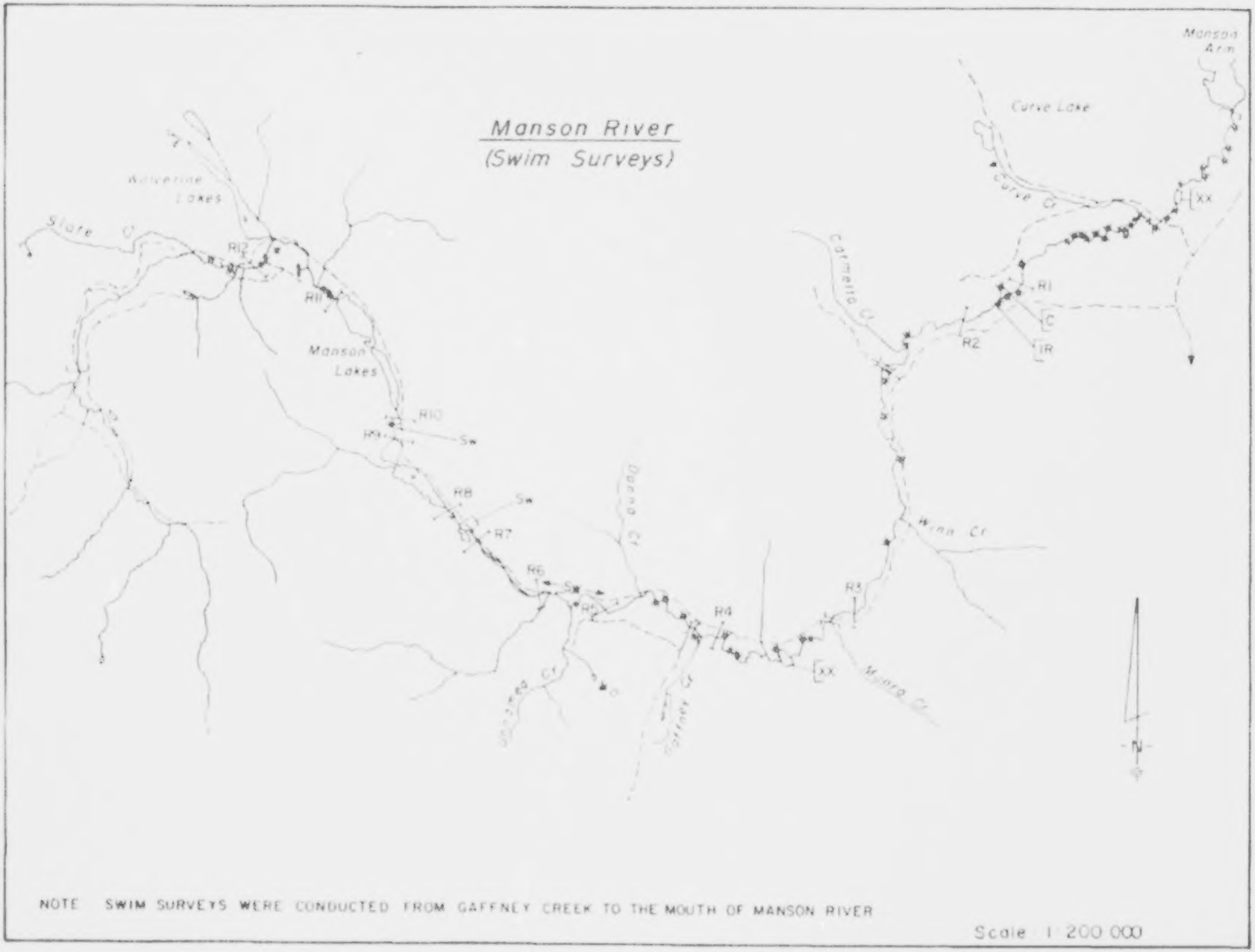
NOTE: KOKANEE STOCKING PROGRAM INITIATED 1990

Scale 1:200 000


Manson Arm
Curve Lake
Curve Cr
XX
BIO
R1
C
IR
R2
BIO
Carmella Cr
Winn Cr
R3
BIO
XX
Munro Cr
BIO
R4
BIO
Gaffney Cr
Donna Cr
BIO
R5
R6
Unnamed Cr
R7
R8
R9
R10
Manson Lakes
R11
R12
Wolverine Lakes
Slate Cr
N

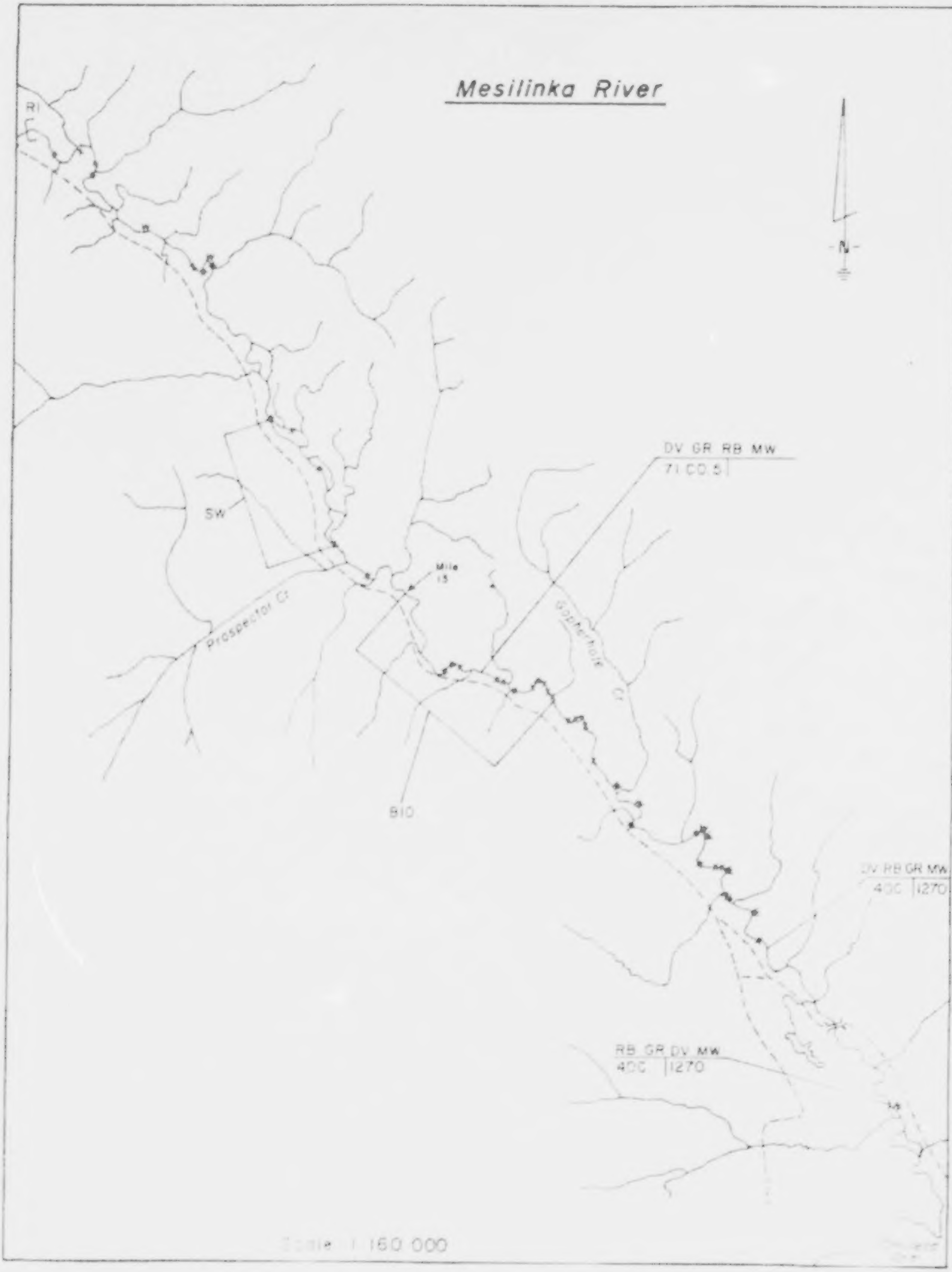
Manson River
(Biophysical Sites)

Scale 1:200 000

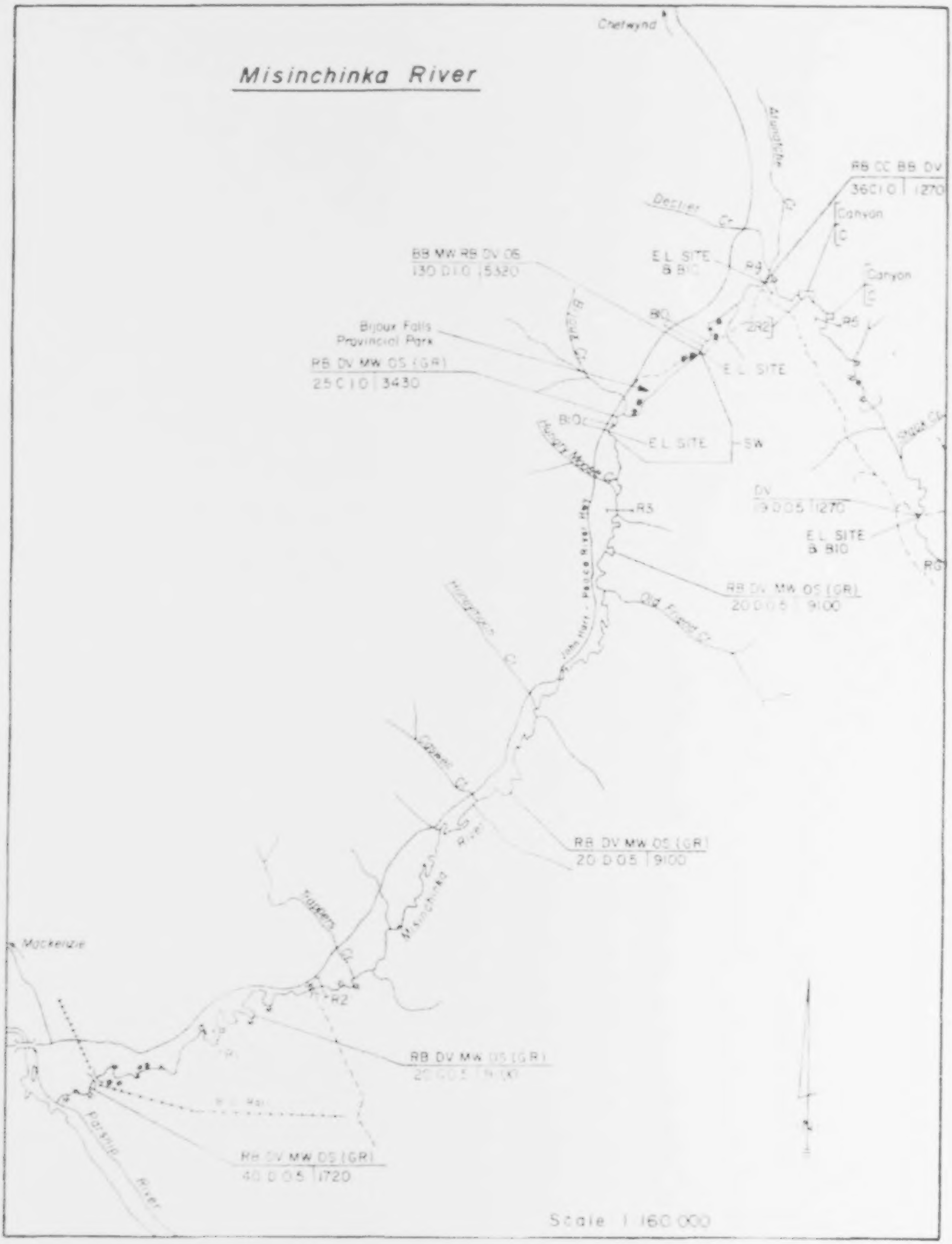

Manson River
(Swim Surveys)
Manson Arm
Curve Lake
Curve Cr
XX
R1
C
IR
R2
Carmella Cr
Wolverine Lakes
Slate Cr
R12
R11
Manson Lakes
R10
R9
Sw
R8
Sw
R7
R6
Sw
R5
Cr
Donna Cr
R4
Cr
XX
Munro Cr
R3
Winn Cr
N

NOTE SWIM SURVEYS WERE CONDUCTED FROM GAFFNEY CREEK TO THE MOUTH OF MANSON RIVER

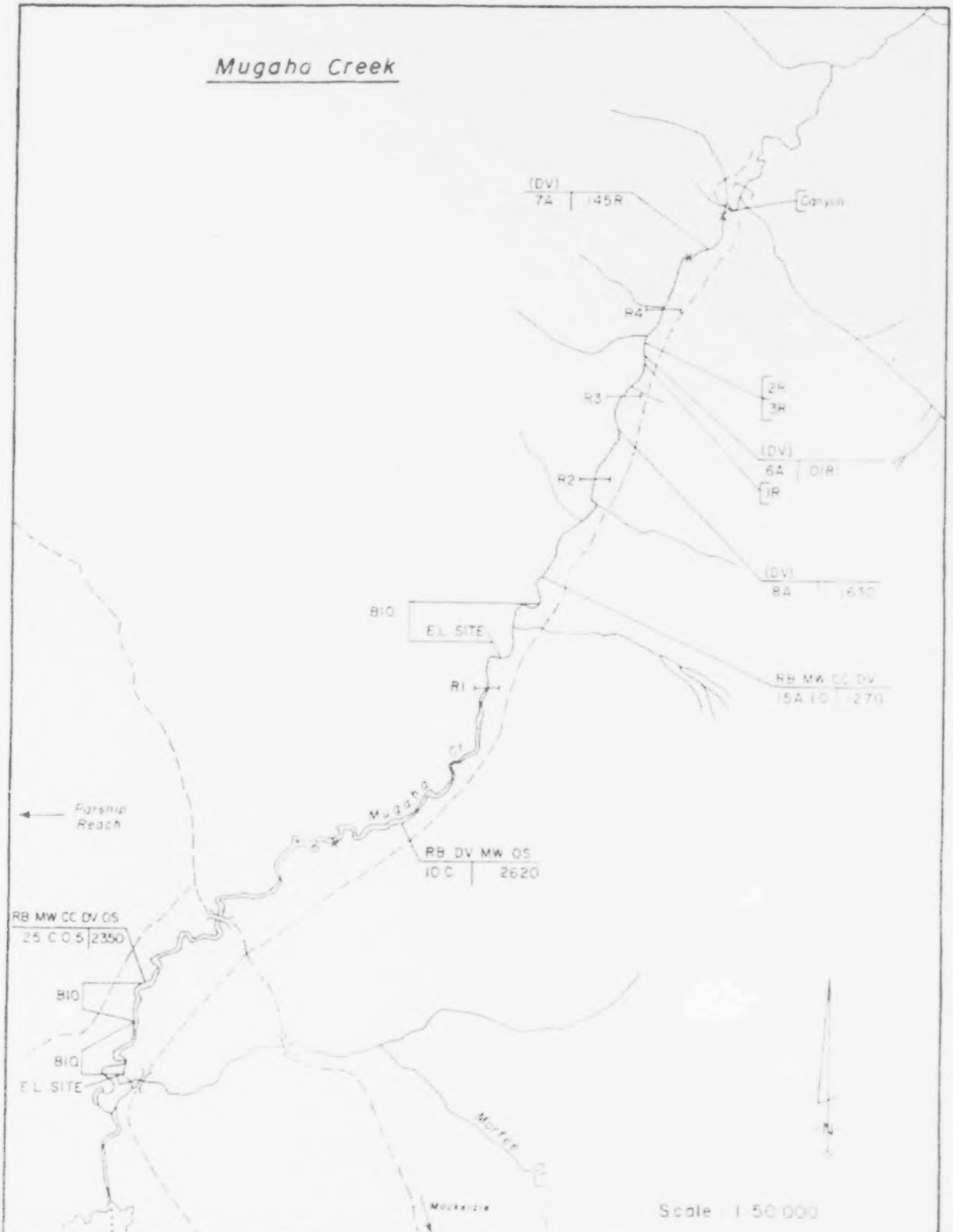
Scale 1:200 000

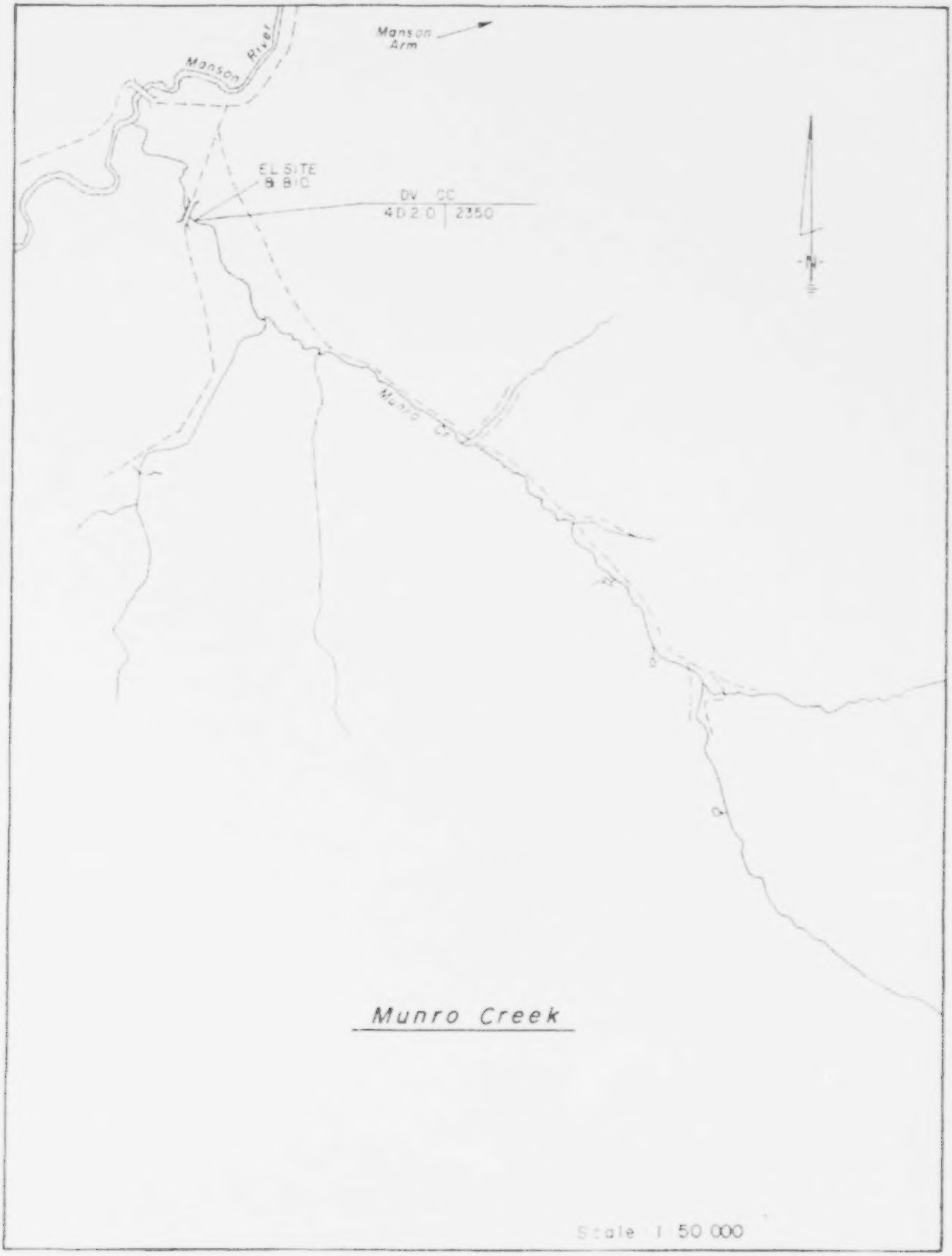

Mesilinka River
N
RI
SW
Prospector Cr
Mile 15
Gopherhole Cr
BIO
DV GR RB MW
71 CO.5
DV RB GR MW
40C 1270
RB GR DV MW
40C 1270
Scale 1:160 000

Misinchinka River

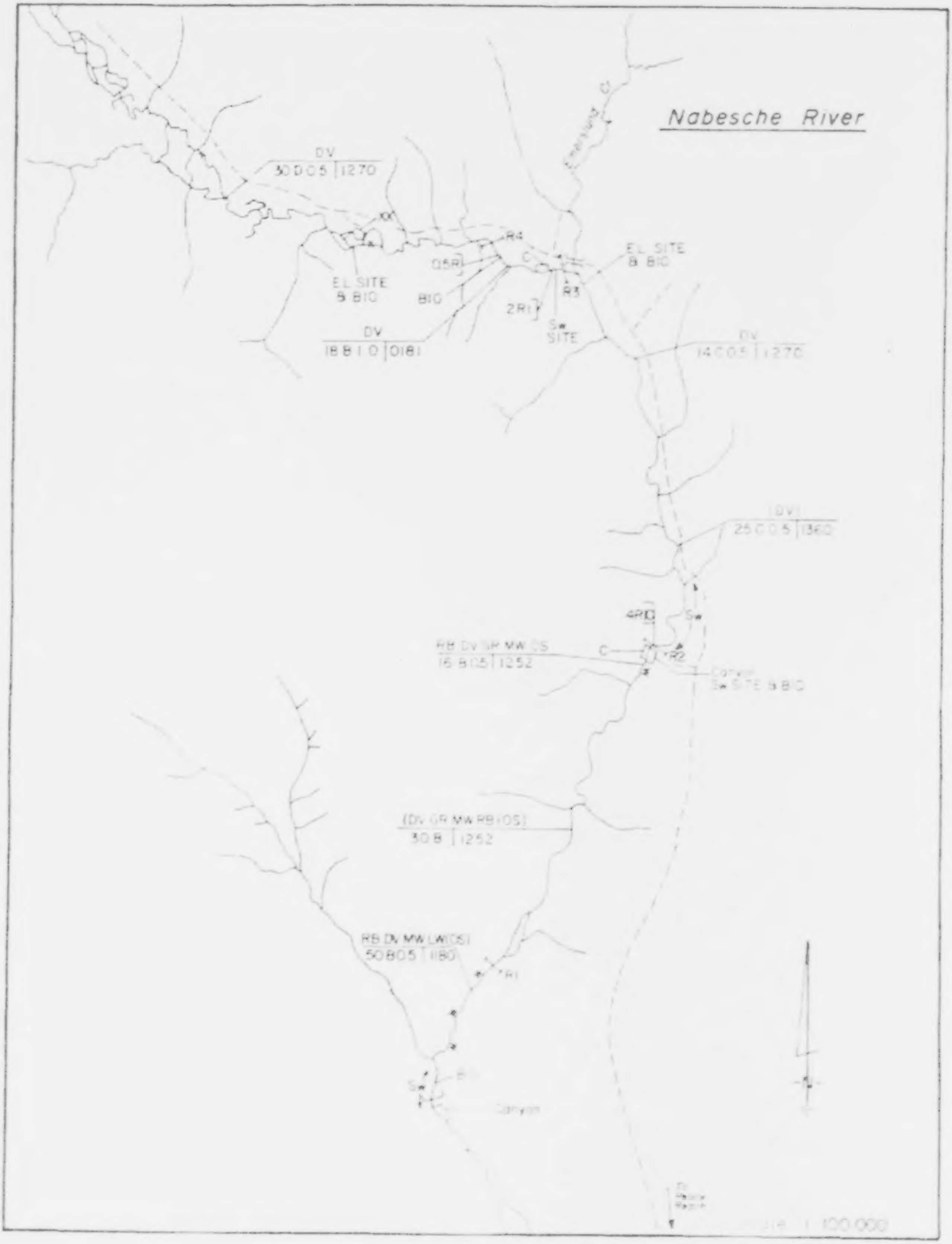

Chetwynd
Alunglahe Cr.
RB CC BB DV
36C1.0 | 1270
Canyon
C
Canyon
C
Dozier Cr.
BB MW RB DV OS
130 D1.0 | 5320
E.L. SITE
& BIO
R4
BIO
2R2
R5
Bijoux Falls
Provincial Park
Bijoux Cr.
RB DV MW OS (GR)
25 C1.0 | 3430
E.L. SITE
BIOc
Honey Moon Cr.
E.L. SITE
SW
Stone Cr.
DV
19 D0.5 | 1270
E.L. SITE
& BIO
R6
R3
John Hart - Peace River Hwy.
RB DV MW OS (GR)
20 D0.5 | 9100
Old Friend Cr.
Honeymoon Cr.
Coldwell Cr.
River
RB DV MW OS (GR)
20 D0.5 | 9100
Misinchinka
Trappers Cr.
Mackenzie
R2
R1
RB DV MW OS (GR)
20 D0.5 | 9100
B.C. Rail
RB DV MW OS (GR)
40 D0.5 | 1720
Parsnip River
Scale 1:160,000

Mugaha Creek

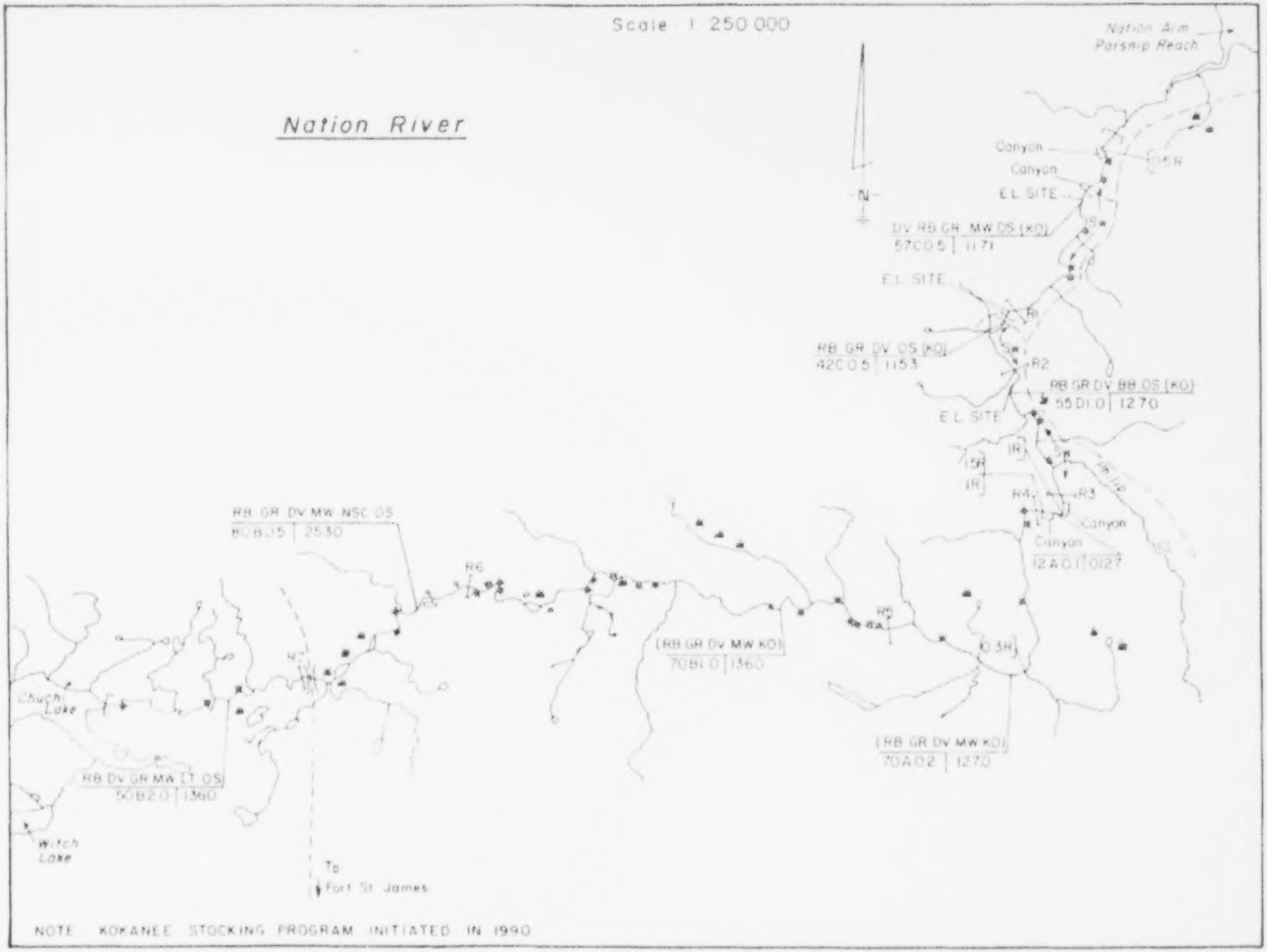

(DV)
7A | 145R
Canyon
R4
2R
3R
R3
(DV)
6A | 0.1R
1R
R2
(DV)
8A | 1630
BIO
E.L. SITE
RB MW CC DV
15A 1.0 | 270
R1
Mugaha Cr.
RB DV MW OS
10 C | 2620
Parsnip Reach
RB MW CC DV OS
25 C 0.5 | 2350
BIO
BIO
E.L. SITE
Morfee
Mackenzie
N
Scale 1:50 000



Manson Arm
Manson River
EL SITE
& BIO
DV CC
402.0 | 2350
N
Munro Cr.
Munro Creek
Scale 1:50 000

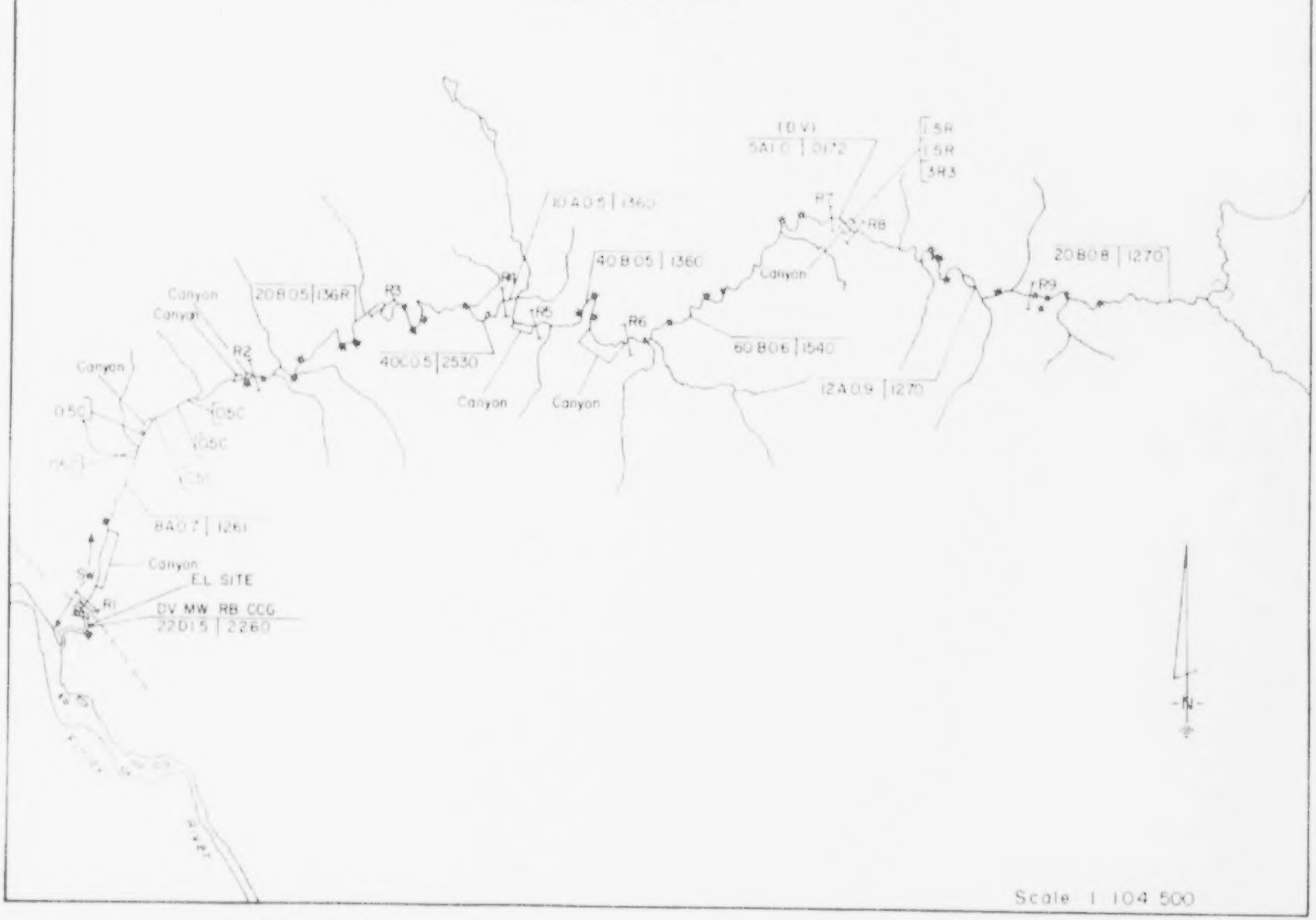

Nabesche River
Emerslund Cr.
DV
30 D 0.5 | 1270
EL SITE
& BIO
R4
Q5R
C
EL SITE
& BIO
R3
BIO
2R1
Sw
SITE
DV
18 B 1.0 | 0181
DV
14 C 0.5 | 1270
(DV)
25 C 0.5 | 1360
4R
Sw
RB DV SR MW OS
16 B 0.5 | 1252
C
R2
Canyon
Sw SITE & BIO
(DV SR MW RB) OS)
30 B | 1252
RB DV MW LW (OS)
50 B 0.5 | 1180
R1
BIO
Sw
Canyon
To
Peace
Reach
1 : 100 000
N

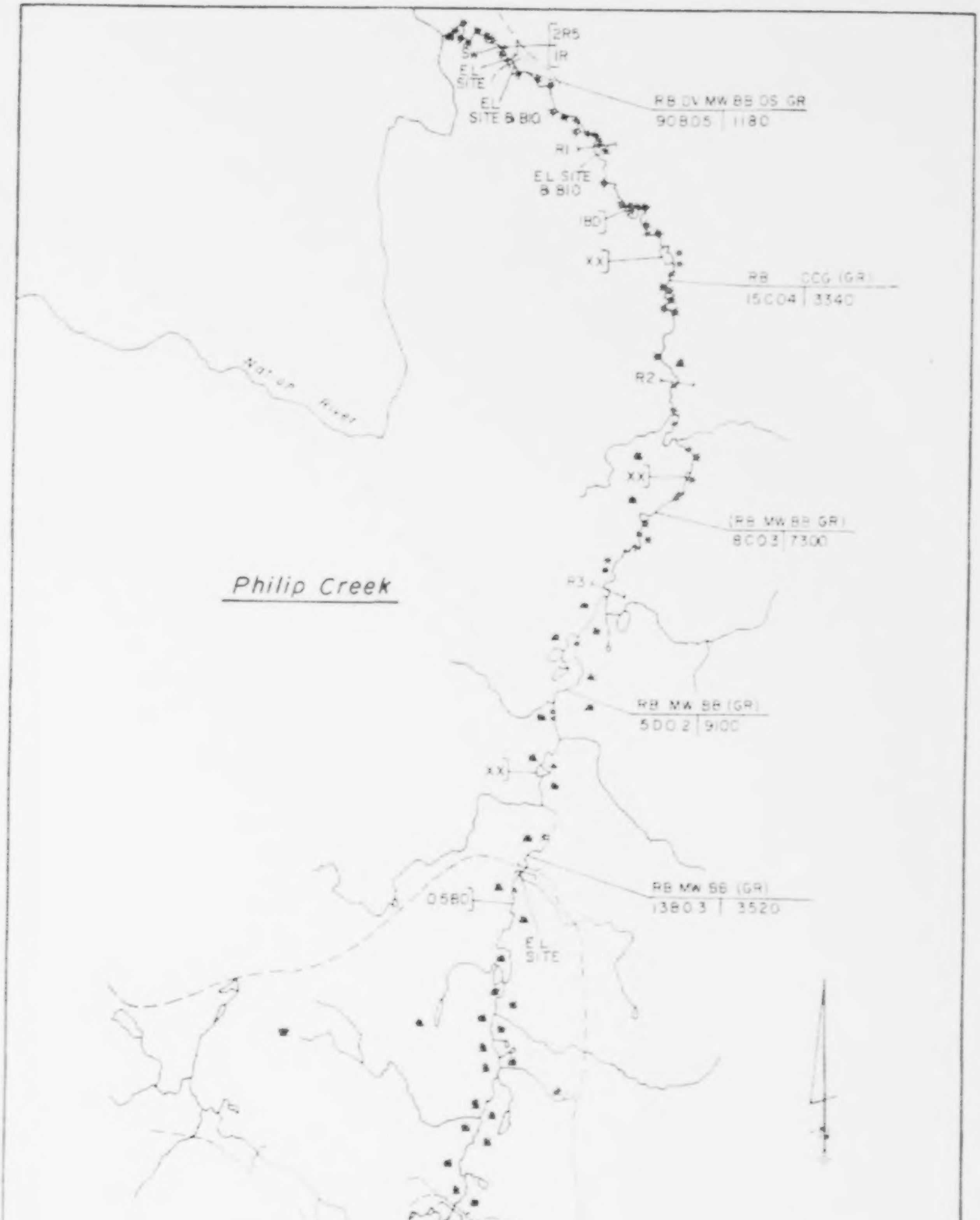
Nation River


Scale 1 250 000
N
Nation Arm
Parsnip Reach
Canyon
Canyon
E.L. SITE
0.5R
DV RB GR MW OS (KO)
57C05 | 1171
Sw
E.L. SITE
R1
RB GR DV OS (KO)
42C05 | 1153
Sw
R2
RB GR DV BB OS (KO)
55D10 | 1270
E.L. SITE
1R
Sw
1.5R
1R
R4
R3
Canyon
Canyon
12A01 | 0127
R5
0.3R
(RB GR DV MW KO)
70A02 | 1270
(RB GR DV MW KO)
70B10 | 1360
R6
RB GR DV MW NSC OS
80B05 | 2530
R7
Chuchi Lake
RB DV GR MW LT OS
50B20 | 1360
Witch Lake
To
Fort St James

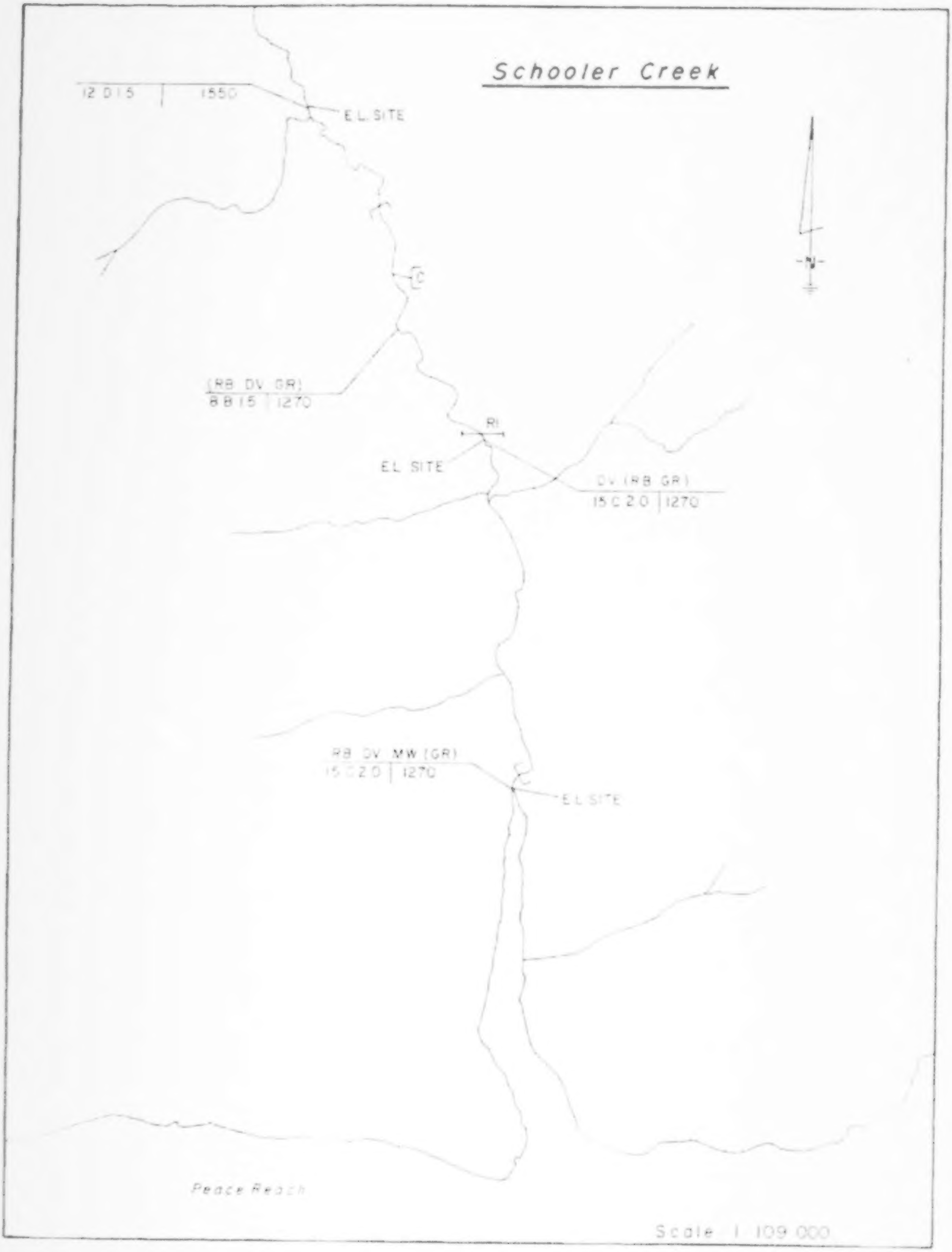
NOTE: KOKANEE STOCKING PROGRAM INITIATED IN 1990

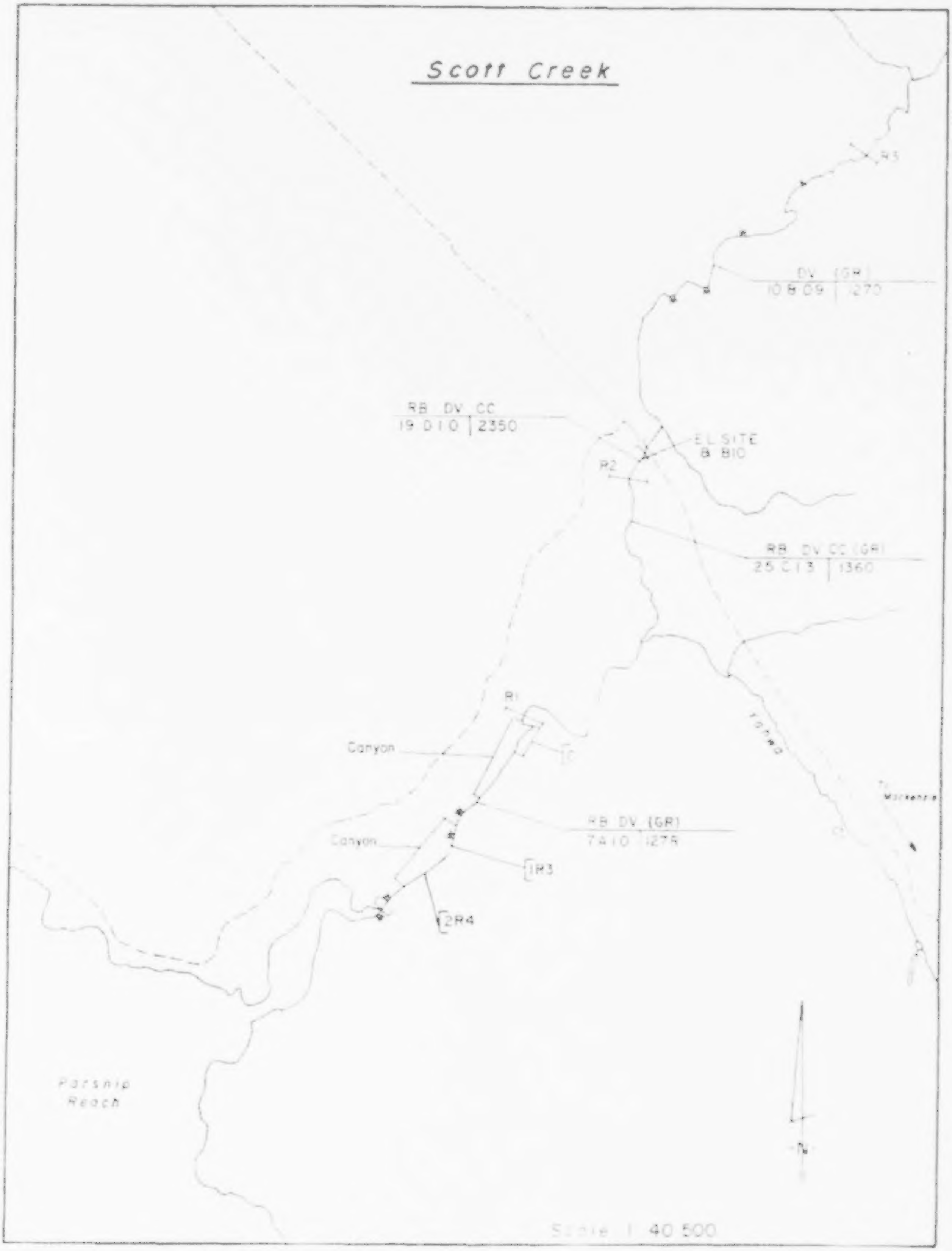
Pesika Creek

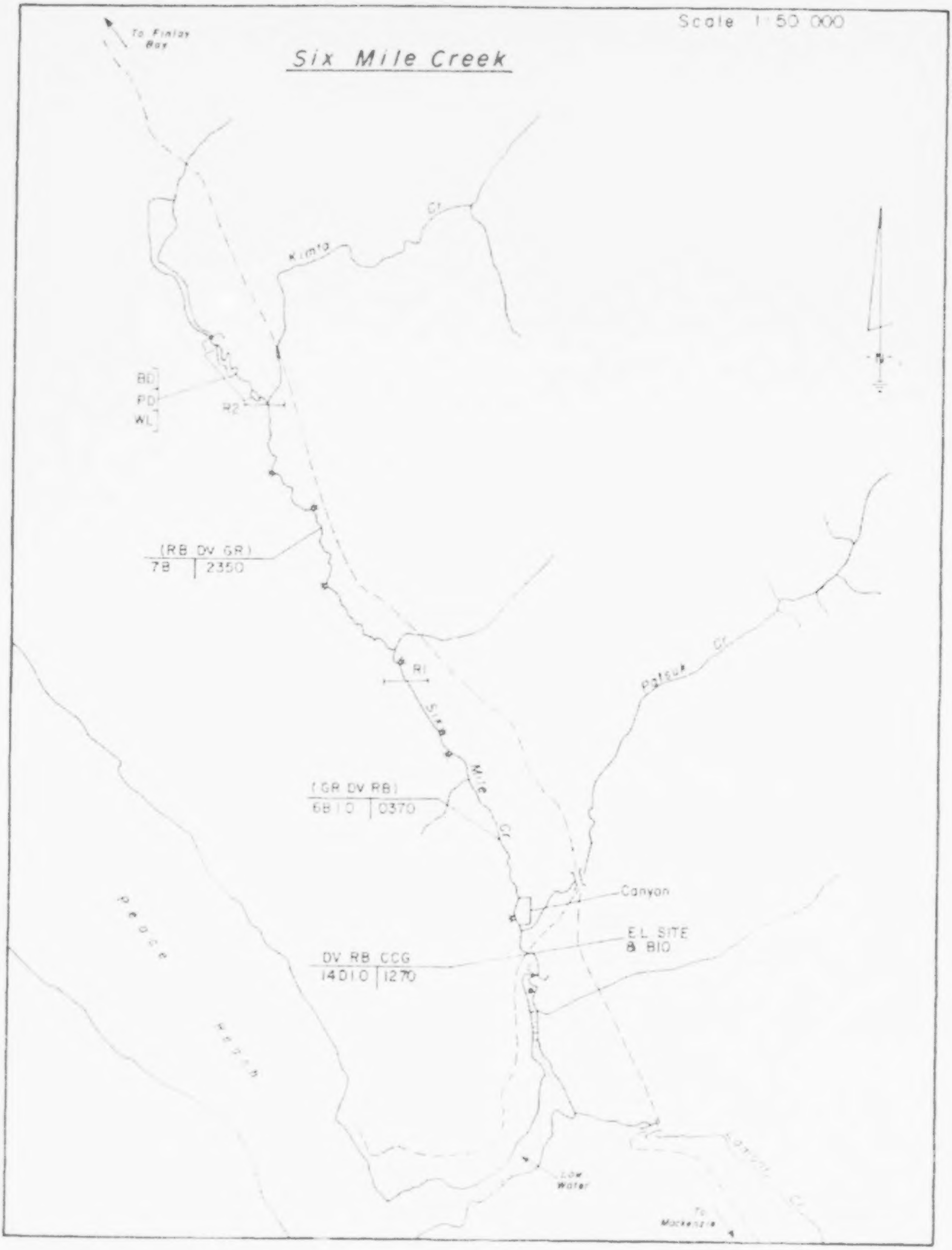

10 A 0 5 | 1360
(D V)
5A1 0 | 0172
1.5R
1.5R
3R3
R7
R8
Canyon
20 B 0 8 | 1270
R9
Canyon
Canyon
20 B 0 5 | 136R
R3
R4
R5
40 B 0 5 | 1360
R6
60 B 0 6 | 1540
12 A 0 9 | 1270
R2
Canyon
40 C 0 5 | 2530
Canyon
Canyon
0 5C
0 5C
0 5C
0 5C
0 5I
8 A 0 7 | 1261
Canyon
S
E.L. SITE
R1
DV MW RB CCG
22 D 1 5 | 2260
N
River
Scale 1 104 500

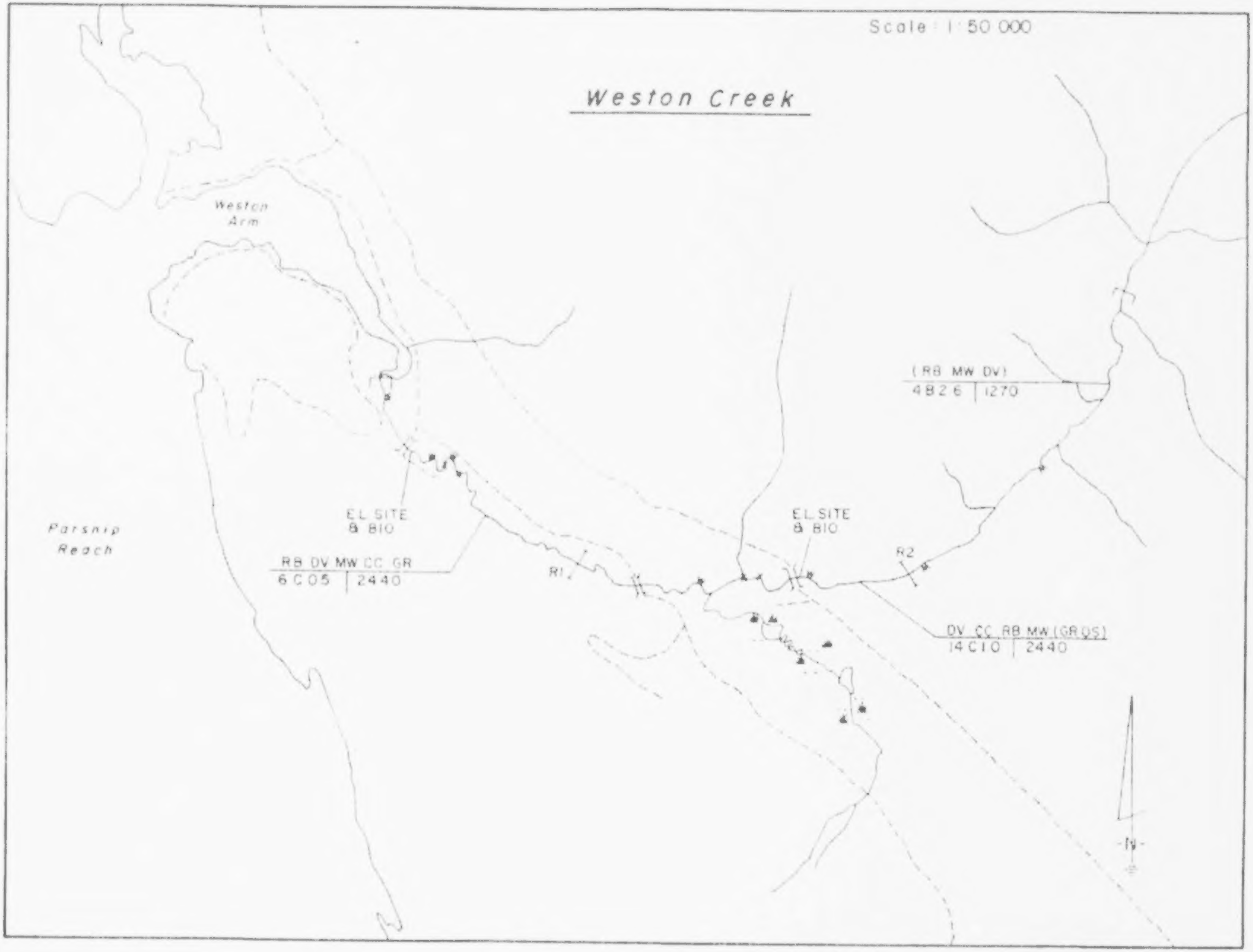

2R5
IR
S
E.L.
SITE
E.L.
SITE & BIO
RB DV MW BB OS GR
90805 | 1180
R1
E.L. SITE
& BIO
IBO
XX
RB CCG (GR)
15C04 | 3340
Nation River
R2
XX
(RB MW BB GR)
8C03 | 7300
Philip Creek
R3
RB MW BB (GR)
5D0.2 | 9100
XX
RB MW BB (GR)
13803 | 3520
0580
E.L.
SITE
Scale 1 : 46 000

Schooler Creek


12 D 1.5 | 1550
E.L. SITE
C
(RB DV GR)
8 B 1.5 | 1270
R1
E.L. SITE
DV (RB GR)
15 C 2.0 | 1270
RB DV MW (GR)
15 C 2.0 | 1270
E.L. SITE
N
Peace Reach
Scale 1:109 000


Scott Creek
R3
DV (GR)
10 B 09 | 1270
RB DV CC
19 D 1 0 | 2350
EL SITE
B B10
R2
RB DV CC (GR)
25 C 13 | 1360
R1
Road
Canyon
1C
To Mackenzie
RB DV (GR)
7 A 10 | 1278
Canyon
1R3
2R4
Parsnip
Reach
N
Scale 1:40 500


Six Mile Creek
Scale 1:50 000
To Finlay Bay
Kimta Cr.
BD
PD
WL
R2
(RB DV GR)
7B | 2350
R1
Six Mile Cr.
Patsuk Cr.
(GR DV RB)
6B1.0 | 0370
Canyon
E.L. SITE
& BIO
DV RB CCG
14D1.0 | 1270
Peace Reach
Low Water
To Mackenzie
Canyon Cr.


Scale : 1:50 000
Weston Creek
Weston Arm
Parsnip Reach
(RB MW DV)
4B26 | 1270
EL SITE
8 B10
R2
DV CC RB MW (GR DS)
14C10 | 2440
EL SITE
8 B10
R1
RB DV MW CC GR
6C05 | 2440
N

BIOPHYSICAL SURVEY DATA

KEY FOR BIOPHYSICAL SURVEY SUMMARY WILLISTON RESERVOIR TRIBUTARIES

STREAM NAME	R	TOT LENG	LENG SURV	X	RE NO	LENGTH		X WW (M)	SURF AREA	% P	% G	% R	% RN	X MAX DEPTH		% SLOP	SPAWNING HABITAT		X CH WIDT	SUBSTRATE						EVALUATIONS					
						TOT	SUR							R	P		%	AREA		% F	% G	% C	% BD	% BR	X D-90	SPA WNG	*	REA RNG	*	ADL HLD	UTI IZ
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32

1. "STREAM NAME"- Gazetted or alias.

2. "R"- Reach of Williston Reservoir the stream flows into. P- denotes Parsnip reach, F- denotes Finlay reach, Pe- denotes Peace reach.

3. "TOT LENG"- Total stream length (km.)

4. "LENG SURV- Total stream length surveyed (km.) on land, on video, or combination of the two.

5. "X"- A "V" in this column indicates portions of this stream have been video taped from a helicopter.

6. "RE NO"- Reach number as separated by hydrological units.

7. "LENGTH TOT"- Total reach length (km.)

8. "LENGTH SUR"- Total reach length surveyed (km.)

9. "X WW (M)"- Mean wetted width (meters) of the stream in the surveyed section of the reach.

10. "SURF AREA"- Surface area of the entire reach in square meters.

11.-14. "%P"- Indicates % of pool within the survey area. "%G"- denotes % of glide. "%R"- denotes % of riffle. "%RN"- denotes % of run.

15. "X MAX DEPTH R"- Mean maximum riffle depth (cm.)

16. "X MAX DEPTH P"- Mean maximum pool depth (cm.)

17. "% SLOP"- Stream gradient.

18. "SPAWNING HABITAT %"- Percentage of the reach with suitable spawning gravel and habitat.

19. "SPAWNING HABITAT AREA"- Area (square meters) of suitable spawning habitat within the reach.

20. "X CH WIDT"- Mean channel width (meters) of the stream within the reach surveyed.

21.-25. "SUBSTRATE"- Composition of stream bed. "%F" denotes % fines, "%G"- % gravel, "%C"- % cobble, "%BD"- % boulders, "%BR"- % bedrock.

26. "X D90"- Diameter of the individual bed material particle (cm.) which is larger than 90% of the remaining material.
27.-28. "SPAWNG"- Evaluation of spawning capability (1-nil to 5-excellent) as determined from ground survey. "*"- evaluations made from helicopter.
29.-30. "REARNG"- Evaluation of rearing capability (1-nil to 5-excellent) as determined from ground survey. "*"- evaluation made from helicopter.
31. "ADLHLD"- Evaluation of adult holding capability (1-nil to 5-excellent) as determined from ground survey.
32. "UTIIZ"- Utilization of stream habitat. (1-barren, 2-underseeded, 3-moderate, 4-carrying capacity, 5-overseeded)

BIOPHYSICAL SURVEY SUMMARY WILLISTON RESERVOIR TRIBUTARIES

														X MAX DEPTH			SPAWNING HABITAT			SUBSTRATE						EVALUATIONS					
STREAM NAME	R	TOT LENG	LENG SURV	X	RE NO	LENGTH TOT	LENGTH SUR	X WW (M)	SURF AREA	% P	% G	% R	% RN	R	P	% SLOP	%	AREA	X CH WIDT	% F	% G	% C	% BO	% BR	X D-90	SPA WNG	*	REA RNG	*	ADL HLD	UTI IZ
AKIE	F	100	84.6	V	1	5.6										0.1											1		1		
AKIE	F			V	2	21.6										0.3											1		3		
AKIE	F			V	3	29.7										0.3											1		3		
AKIE	F			V	4	7										0.4											2		3		
AKIE	F			V	5	5.3										0.6											1		3		
AKIE	F			V	6	2.4										0.4											1		2		
AKIE	F			V	7	4.1										0.5											3		4		
AKIE	F			V	8	4.4										0.4											1		2		
AKIE	F			V	9	2.8										1.8											1		2		
AKIE	F			V	10	1.7										4.1											1		1		
BRUIN	F	26	3.2		1	5	3	8	40000	4	60	17	19	25	125	0.5	28	11200	7.4	10	20	60	10	0	23	4		3		2	3
BRUIN	F				2	22.8	0.2	8.5	193800	7	41	40	12	20	150	0.6	12	23256	12												
CHOWIKA	F	39	28	V	1	9.4	4	18	169200	10	10	80	0	60	150	1.2			22	10	10	25	50	5	50	1.5	1	4	2	3	2
CHOWIKA	F			V	2	2.3										0.8											1		2		
CHOWIKA	F			V	3	7.85										0.6											5		5		
CHOWIKA	F			V	4	4.8										1.2											2		4		
CHOWIKA	F			V	5	3.8										2.4											1		1		
COLLINS	F	26	14.5	V	1	9.5	3	5.3	50350	12.8	40	35	13	46.7	80	1.3	13	6545.5	9	20	20	60	T	0	19	3	2	4	4	3	2
COLLINS	F			V	2	5										1.3											3		5		
DAVIS	F	39	33	V	1	4.75	4.75	13.9	66025	2	39	28	31	65	85	0.6	4.88	3222.02	18	5	20	40	35	T	50	1	1	3	2	2	1
DAVIS	F			V	2	6.6	6.6	20	132000	10	35	35	20	50	150	0.2	5	6600	25	10	25	40	25	T	40	2	4	3	4	3	2
DAVIS	F			V	3	11.2	2	25	280000	20	45	25	10	25	150	0.4	25	70000	30	10	25	45	20	0	25	3.5	5	4	5	5	3
DAVIS	F			V	4	1										1.5											2		3		
DAVIS	F			V	5	1										1.5											4		4		
DAVIS	F			V	6	1										1.5											1		1		
DAVIS	F			V	7	3										0.7											3		4		
DAVIS	F			V	8	4.2										1.5											2		3		
LAFFERTY	F	29	25	V	1	1.1										0.3											5		3		
LAFFERTY	F			V	2	1.5	1.5	7.3	10950	3	39	53	5	60	150	0.3	26.2	2865.62	9.75	20	30	40	10	0	35	3	1	3	3	2	2
LAFFERTY	F			V	3	4.7	4.7	7.4	34780	26	49	8	17	50	78	0.5	0.19	66.082	8.3	50	40	10	0	0	15	1	2	5	4	4	2
LAFFERTY	F			V	4	3.5	3.5	11.4	39900	15.5	76	8.8	0	62	150	0.7	0.04	15.5051	12	55	45	0	0	0	12	1	1	2	5	3	2
LAFFERTY	F			V	5	11.8										0.8											5		5		
LAFFERTY	F			V	6	2.4										8.4											1		1		
MESILINKA	F	165	65	V	1	67.7	20	38	2344600	19	61	13	2	58	418	0.2	30	703380	77						23	4	2	3	3	4	3
PESIKA	F	42	38.5	V	1	1.6	1.6	15	24000	20	30	30	20	25	120	0.2	15	3600	30	20	15	65	0	0	25	4	5	4	4	4	1
PESIKA	F			V	2	5.95										0.3										4	1	4	2	4	1
PESIKA	F			V	3	3.8										0.5											1		3		
PESIKA	F			V	4	4.6										0.5											5		5		

BIOPHYSICAL SURVEY SUMMARY WILLISTON RESERVOIR TRIBUTARIES

STREAM NAME	R	TOT LENG	LENG SURV	X	RE NO	LENGTH TOT	LENGTH SUR	X WW (M)	SURF AREA	% P	% G	% R	% RN	X MAX DEPTH R	X MAX DEPTH P	% SLOP	SPAWNING HABITAT %	SPAWNING HABITAT AREA	X CH WIDT	SUBSTRATE % F	SUBSTRATE % G	SUBSTRATE % C	SUBSTRATE % BD	SUBSTRATE % BR	SUBSTRATE X D-90	EVALUATIONS SPA WNG	*	REA RNG	*	ADL HLD	UTI 12
PESIKA	F			V	5	1.4										0.5											1		3		
PESIKA	F			V	6	3.2										0.5											1		3		
PESIKA	F			V	7	6.6										0.6											3		5		
PESIKA	F			V	8	0.5										1											1		1		
PESIKA	F			V	9	5.1										0.9											1		1		
PESIKA	F			V	10	5.3										0.8											1		2		
BLACKWATER	P	41	33	V	1	9.4																					2		5		
BLACKWATER	P			V	2	16																					1		5		
BLACKWATER	P			V	3	11	2	35	385000	100	0	0	0	0	400	0	0		120	70	30	0	0	0	-		1		5		
BLACKWATER 11	P	8.5	0.14			8.5	0.14	3.8	12300	14	76	10	0	16.3	60	0.4	11	3553	10												
BLACKWATER 12	P	3	0.15		-	3	0.15	3.7	11100	42	42	16	0	19	65	0.2	41	4551	3.7	30	70	0	0	0	7						
CHICHOUYENILY	P	22.5	3.5		1	22.5	3.5	5.9	132750	26	39	33	2	13	58	0.7	11.5	15266.3	15.3	15	30	55	0	0	22						
CUTTHUMB	P	28.6	10	V	1	2.5	2	11	27500	3	39	58	0	26	110	0.7	2	550	15.9	1	14	15	60	10	49		1		1		
CUTTHUMB	P			V	2	2																					1		2		
CUTTHUMB	P			V	3																						4		3		
GAFFNEY	P	37	9	V	1	2.5	0.3	17	42500	0	25	75	0	40	-	0.5	3.1	1317.5	20.8	0	10	30	60	0	42		1		2		
GAFFNEY	P			V	2																						2		2		
MANSON	P	93	85	V	1	9.5	9.5	21	199500	3	62	25	10	30	45	0.2	2	3990	30.5	50	40	10	0	0	24	1.5	3	1.5	5	1.5	1
MANSON	P			V	1.5	6	6	21	126000	10	50	35	5	30	150	0.3	15	18900	30	20	40	40	0	0	25	4		4		4	3
MANSON	P			V	2	3	3									0.2										1	1	4	3	5	2
MANSON	P			V	3	17	17	26	442000	13	33	46	8	52	175	0.4	1.94	8574.8	29	10	25	40	25	R	43	1	2	4	4	3	1
MANSON	P			V	4	9.8	9.8	21	205800	23	44	11	22	110	300	0.3	9.8	20168.4	41	10	35	50	5	0	20	3	5	2	4	4	2
MANSON	P			V	5	6.1	6.1	14	85400	5	30	35	30	45	60	0.3	1.57	1340.78	31.5	10	35	30	25	0	35	1	4	2	4	3.5	2
MANSON	P			V	6	3.5	3.5	12	42000	0	68	32	0	40		0.4	5.43	2279.73	16	20	30	30	20	0	30	2	3	2	4	3	2
MANSON	P			V	7	3.8	-									0.1											2		4		
MANSON	P			V	8	1.6	0.5	19	30400	10	40	50	0	40	20	0.6			20	30	30	30	10	0	70	2	5	4	5	2.5	2
MANSON	P			V	9	4.5	4.5									0															
MANSON	P			V	10	1.1	1.1									0.9										4	5	4	4	4	3
MANSON	P			V	11	5.4	5.4									0											1				
MANSON	P			V	12	6.3										0.5											1		5		
MANSON	P			V	13	10.75										1.5											1		2		
MISINCHINKA	P	70	70	V	1	8	0.1	20		0	65	35	0	50		0.2			40	10	70	20	0	0	12		2		2		
MISINCHINKA	P			V	2	7.1										0.1											1		3		
MISINCHINKA	P			V	3	32.75										0.1											1		3		
MISINCHINKA	P			V	4	11.1	4.5	16.9	187590	10	44	37	9	31	105	0.2	6	11255.4	17	28	27	38	7	0	25.5	3	4	2.5	3	3.5	2
MISINCHINKA	P			V	5	2.9										1.1											1		2		
MISINCHINKA	P			V	6	3.5	0.3	14.7	51450	0	60	39	1	29		0.3	9.4	4836.3	15.6	8	20	64	8	0	42.7		1		2		

BIOPHYSICAL SURVEY SUMMARY WILLISTON RESERVOIR TRIBUTARIES

STREAM NAME	R	TOT LENG	LENG SURV	X	RE NO	LENGTH		X WW (M)	SURF AREA	% P	% G	% R	% RN	X MAX DEPTH		% SLOP	SPAWNING HABITAT		X CH WIDT	SUBSTRATE						EVALUATIONS					
						TOT	SUR							R	P		%	AREA		% F	% G	% C	% BD	% BR	X D-90	SPA WNG	*	REA RNG	*	ADL HLD	UTI IZ
MUGAHA	P	25.5	25.5	V	1	5.3	1.6	10	53000	29	47	21	3	21.8	141	0.3	11	5830	25								4		4		
MUGAHA	P			V	2	2.8	0.9	13	36402	6	54	42	0	27	200	0.3	6.6	2402.4	13.8	30	20	50	0	0	42		1		1		
MUGAHA	P			V	3	1																					3		3		
MUGAHA	P			V	4	1																					1		2		
MUGAHA	P			V	5																						2		3		
NATION	P	216	94.5	V	1	12.3	12	44	541200	0	99	0	0	0	0	0.2			57	10	10	60	20		39	1	1		1		
NATION	P			V	2	4.3	4.3	35	150500	65	0	35	0	100	400	0.2			42	10	0	20	35	35	65	1	1		2		
NATION	P			V	3	7.8	7.8	45	351000	10	10	80	23	30	200	0.2			55	10	20	60	10	0	30		1		2		
NATION	P			V	4	2.6	2.6									0.1											1		3		
NATION	P			V	5	17	9	50	850000	40	30	20	10	30	300	0.2			60	10	20	30	40	0	40	2	2	3	2	4	2
NATION	P			V	6	26	26	60	1560000	50	30	20	0	20	200	0.1			70	10	30	50	10	0	25	3	3	3	4	3	3
NATION	P			V	7	11	11	70	770000	40	60	0	0	0	200	0.1			80	20	50	20	10	0	25	1	2	2	4	3	3
NATION	P			V	8	14	14	50	700000	20	40	30	10	100	400	0.2			55	10	30	20	40	T	60	2	1	4	2	4	3
PHILIP	P	82	62.4	V	1	7.8	0.5	18.9	147420	32	26	42	0	40	350	0.4	4.46	6569.04	60	10	50	40	0	0	27	2	1	3	3	4	
PHILIP	P			V	2	11.2	0.3	15.8	176624	0	41	59	0	55		0.4	2.4	4238.98	20	10	10	65	15	0	32	2	3	3	5	2	
PHILIP	P			V	3	9.8										0.3											3		5		
PHILIP	P			V	4	33.65	0.1	13	437450	20	60	20	0	20	100	0.2				30	55	15					1		5		
SCOTT	P	25	9.3	V	1	2.1										1											1		2		
SCOTT	P			V	2	3	2.5	16	48000	1	12	79	7	44	100	1.3	6	2880	20	15	30	40	15	0	25	2	1	4	4	3	2
SCOTT	P			V	3	4.2	1									0.9											2		3		
SIXMILE	P	11.6	11	V	1	3.5	1.2	8.6	30100	13	56	29	2	18	103	0.7	28	8428	14.6	10	25	40	25	0	28		1		1		
SIXMILE	P			V	2	3.3																					1		2		
SIXMILE	P			V	3																						2		3		
WESTON	P	18	10.7	V	1	3.2	2	10	32000	32	35	32	0	20	86.7	0.6	10.5	3360	11.4	20	40	40	T	0	13	2	5	4	5	4	2
WESTON	P			V	2	3.7	0.5	9.7	35890	12.3	19	70	0	35	100	1.5	0.98	351.722	13.5	20	40	40	1	0	25	2	2	3	3	3	2
WESTON	P			V	3	3.8										2.6											1		2		
CARBON	PE	46	32.3	V	1	5.7	5	28.9	164730	19.6	35	46	0	80	425	1.7	10.6	17461.4	42	10	10	40	40	T	50	2	1	3	2	4	2
CARBON	PE			V	2	1	1	12	12000	40	20	10	30	100	200	0.6	0.5	60	20	10	10	30	20	20	60	1	1	2	3	3	2
CARBON	PE			V	3	6.6	6.6	19.6	129360	2	18	75	5	130	150	0.5	3.2	4139.52	26	10	15	40	25	T	64	1	1	3	3	2	2
CARBON	PE			V	4	1.8	1.8	20.4	36756	2	15	78	4.6	75	150	0.4	0	0	27	5	15	30	50	0	50	1	1	3	4	2	2
CARBON	PE			V	5	12.8	12	23.9	305920	27	54	11	8.6	60	200	0.5	37.3	114016	30	15	35	35	15	0	24	3	5	3	5	3	2
CARBON	PE			V	6	4.4										1.1										1	1	4	3	3	3
CLEARWATER	PE	49.5	47	V	1	9.9	4	25.2	249480	22.5	29	48	1.1	53.3	210	0.5	2.29	5713.09	38	10	10	30	50	0	40	1	1	3	2	4	1
CLEARWATER	PE			V	2	11.5	4	16.9	194350	4.46	55	37	3	33.3	150	0.7	15.4	29929.9	20	10	15	45	30	T	40	2	1	3	2	2	1
CLEARWATER	PE			V	3	7.2										0.9											5		5		
CLEARWATER	PE			V	4	2.8										0.6											1		3		
CLEARWATER	PE			V	5	4										0.9											1		2		
CLEARWATER	PE			V	6	1.6										1.2											5		4		
CLEARWATER	PE			V	7	3.8										1.2											1		1		
CLEARWATER	PE			V	8	1.1										0.9											1		2		

BIOPHYSICAL SURVEY SUMMARY WILLISTON RESERVOIR TRIBUTARIES

STREAM NAME	R	TOT LENG	LENG SURV	X	RE NO	LENGTH		X WW (M)	SURF AREA	% P	% G	% R	% RN	X MAX DEPTH		% SLOP	SPAWNING HABITAT		X CH WIDT	SUBSTRATE						EVALUATIONS					
						TOT	SUR							R	P		%	AREA		% F	% G	% C	% BD	% BR	X D-90	SPA WNG	*	REA RNG	*	ADL HLD	UTI IZ
DRESSER	PE	10	2		1	1	0.5	6.6	6600	1	42	43	14	28	0	1	12	792	7	10	30	40	20	0	31	2.5	1	4	2	2	3
DRESSER	PE				2	1	0.5	8.8	8800	1	31	64	4	25	100	1	8.5	748	13	10	20	30	40	0	49	2.5	1	4	2	2	3
DUCETTE	PE	22	5.1	V	1	5.1	1	8.8	44880	1	30	64	4	37.5	150	1.9	8.5	3814.8	13	10	10	30	50	1	50	1.5	1	2.5	1	1	3
DUNLEVY	PE	15	9.7	V	1	4.8	4.8	11.3	54272	1	35	55	9	25	90	1.1	9	4884.48	13	10	30	40	20	0	33	2.5	2	3	2	2	3
DUNLEVY	PE			V	2	4.9	1	8	39200	20	60	20	0	25	80				10	10	20	50	20	0	40	2	2	3	3	2	1
EMERSLUND	PE	19	4.4	V	1	2.3	0.5	9.8	22540	3	16	79	2	34	110	0.5	5.1	1149.54	11.7	5	10	80	5	0	17	2	2	2	1		
EMERSLUND	PE			V	2	2.55										1.1											2		2		
MACOUN	PE	22	0.2		1	22	0.2	5.8	127600	10	43	47	0	23	80	0.9	19	24244	14	10	20	55	15	0	31		2		3		
NABESCHE	PE	50.2	34	V	1	3.3	3.3	15.9	52470	14	30	54	2	54	250	0.7	3.6	1888.92	23.9	10	10	40	40	0	73	2	2	3	3	3.5	2.5
NABESCHE	PE			V	2	8.3	1	16	132800	40	13	29	18	70	375	0.4	4.5	5976	16.3	5	25	40	10	20	40	1	2	3	2	4.5	3
NABESCHE	PE			V	3	9.4	4.5	12.8	120320	4	2	59	35	30	95	0.6	2	2406.4	14.5	5	15	65	10	5	22	2	3	3	2	2	1
NABESCHE	PE			V	4	1.7	1.4	15.1	25670	19	0	29	52	55	400	1	5.9	1514.53	17	5	5	20	60	10	58	1	1	2	2	3	2
NABESCHE	PE			V	5	11.5	1.5	13.5	155250	16	30	30	24	22	125	0.3	8.3	12885.8	37.7	5	20	60	15	0	8		3		3		
NABESCHE	PE				·	16.2	0.26	15	243000	10	40	50	0	23	120	0.3	7.8	18954	15	5	10	75	10	0	20						
SCHOOLER	PE	27	12.6	V	1	3.8	1.5	15	57000	10	0	80	10	50	100	1.7	1	570	15	10	20	35	35	0	70	1	1	4	2	3	2
SCHOOLER	PE			V	2	3.8	2	15	57000	10	0	80	10	70	100	1.7	1	570	15	10	20	45	30	0	70	1	2	4	3	3	2
SCHOOLER	PE			V	3	5	2	10	50000	15	25	50	10	30	100	0.5	25	12500	12	10	45	35	10	0	25	3.5		4		3	1

SYSTEM NAME BLACKWATER SURVEY UTM 10.4565.61565 MAP# 93 0/12
WATER TEMP. (C) 10 DATE SEPT. 5, 1990 REACH LENGTH 11.0 km.
REACH 3 CREW AM JD LENGTH SURVEYED 2000 m.
LOCATION BLACKWATER MAIN, CULVERT CROSSING, 81 KM NORTH ON FINLAY FSR ROAD

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
P	2000	35	120	0	100	400	-	0	2000	0	75	75	80	0	20	MEANDERING MOOSE M.

CX: WW STARTS OF NARROW (8m.) AS SHRUBS/GRASS WETLAND THEN DIVIDES INTO SEVERAL CHANNELS
LOCAL KNOWLEDGE INDICATED SHALLOW RIFFLE TYPE HABITAT, HOWEVER NONE FOUND
SUGGEST INVESTIGATING WITH JET SLED

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                                                          sq. m.      %
surface area    70000            AREA OF RIFFLE =              0       0
length           2000            AREA OF POOL   =          70000     100
mean width         55            AREA OF RUN    =              0       0
spawn area          0            AREA OF GLIDE  =              0       0
%sp hab             0            TOTAL          =          70000     100
area of riffle               0      0
area of pool             70000    100  MEAN MAX POOL DEPTH  =          400
area of run                  0      0  MEAN CHANNEL WIDTH =            120
area of glide                0      0  MEAN RIFFLE DEPTH =               0
area of r-p                  0      0  MEAN D-90 =                       -
area of r-rn                 0      0
area of r-g                  0      0
area of p-r                  0      0
area of p-rn                 0      0
area of p-g                  0      0
area of rn-r                 0      0
area of rn-p                 0      0
area of rn-g                 0      0
area of g-r                  0      0
area of g-p                  0      0
area of g-rn                 0      0
               TOTAL =   70000    100
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SYSTEM NAME BLACKWATER TRIB1 SURVEY UTM 10.4566.61531 MAP# 93 0/12
WATER TEMP. (C) 10 DATE SEPT. 7, 1990 REACH LENGTH 8.5 km.
REACH N/A CREW AM, JD LENGTH SURVEYED 140.5 m.
LOCATIO BRIDGE XING AT 4.6 KM ON ROAD 14000 (OFF FINLAY FSR ROAD)

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90	RISE (cm.	RUN (m.)	% SLOPE	INSTREAM COVER			OVERSTREAM COVER		COMMENTS
											FRY	PARR	ADUL	CROWN	OVERHANG	
P	9	4.5	10	0	48	60	6	0	9	0.00	5	7	5	5	7	RLB/19
R	4.5	1.8	8.5	70	15	20	12	11	4.5	2.44	0	0	0	0	10	
G	16	4.5	12	7	25	30	10	0	16	0.00	7	12	0	10	5	RLB/20 DEBRISJAM
R	3.5	2	9.5	80	10	18	11	7	3.5	2.00	1	1	0	0	0	
G	38	4.5	16.5	5	35	70	20	2	38	0.05	30	40	1	35	25	U CUT BANKS
R	6.5	1.5	8	80	20	30	12				0	10	1	25	30	
G	24	3.5	10.5	5	30	50	12	5	24	0.21	20	35	1	25	20	
R	10.5	2.5	9	20	20	25	14	23	10.5	2.19	0	1	0	20	15	
P-G	16	3.5	6	1	45	70	23	1	16	0.06	10	30	2	60	7	UCUT BANKS,EF SITE
G	12.5	4.5	8.5	30	25	60	8	2	12.5	0.16	30	20	0	25	5	UCUT BANKS,EF SITE

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                                                              sq. m.      %
surface area    530.85            AREA OF RIFFLE =             51.1      9.63
length          140.50            AREA OF POOL   =             74.1     13.96
mean width        3.78            AREA OF RUN    =                0      0.00
spawn area       59.55            AREA OF GLIDE  =           405.65     76.42
%sp hab          11.22            TOTAL          =           530.85    100.00
area of riffle           51.10   9.63
area of pool             40.50   7.63  MEAN MAX POOL DEPTH  =          60.00
area of run               0.00   0.00  MEAN CHANNEL WIDTH =             9.85
area of glide           383.25  72.20  MEAN RIFFLE DEPTH =             16.25
area of r-p               0.00   0.00  MEAN D-90 =                     12.80
area of r-rn              0.00   0.00
area of r-g               0.00   0.00
area of p-r               0.00   0.00
area of p-rn              0.00   0.00
area of p-g              56.00  10.55
area of rn-r              0.00   0.00
area of rn-p              0.00   0.00
area of rn-g              0.00   0.00
area of g-r               0.00   0.00
area of g-p               0.00   0.00
area of g-rn              0.00   0.00
                TOTAL =  530.85   100
```

SYSTEM NAME BLACKWATER TRIB2 SURVEY UTM 10.4556.61564 MAP# 93 0/12
WATER TEMP. (C) 10 DATE REACH LENGTH N/A
REACH N/A CREW LENGTH SURVEYED 149.5 m.
LOCATION 25 M UPSTRM FROM CULVRT XING AT 81.6 KM ON FINLAY FSR ROAD

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90	RISE(cm)	RUN (m)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
R	13	3	7	35	10	20	7	6	13	0.46	2	25	0	7	5	
G-P	10	6.5	8.5	20	30	50	4	0	10	0.00	2	10	1	5	0	
R	8	4.5	7	80	10	25	8	4	8	0.50	2	10	0	0	0	
G-P	28	4	8	40	25	45	6	1	28	0.04	2	30	0	0	0	
G-P	23	3.5	9.5	50	30	42	8	1	23	0.04	5	20	5	0	1	
P	6.5	4.5	7	10	40	60	5	0	6.5	0.00	0	15	5	30	10	
G-P	30	2.5	9.5	80	30	60	5	1	30	0.03	3	20	5	10	0	
R	8	1.5	6.5	90	10	12	10	12	8	1.50	1	0	0	45	0	
G	11	3	14	40	15	22	9	1	11	0.09	1	3	0	30	0	RL8/5
P	12	6	13	0	30	70	0.3	0	12	0.00	3	20	10	50	15	

		sq. m.	%
AREA OF RIFFLE	=	87.00	15.71
AREA OF POOL	=	234.25	42.30
AREA OF RUN	=	0.00	0.00
AREA OF GLIDE	=	232.50	41.99
TOTAL	=	553.75	100.00

MEAN MAX POOL DEPTH 65.00
MEAN CHANNEL WIDTH = 9.00
MEAN RIFFLE DEPTH = 19.00
MEAN D-90 = 6.89

surface area	553.75		
length	149.50		
mean width	3.70		
spawn area	227.43		
%sp hab	41.07		
area of riffle		87.00	15.71
area of pool		101.25	18.28
area of run		0.00	0.00
area of glide		33.00	5.96
area of r-p		0.00	0.00
area of r-rn		0.00	0.00
area of r-g		0.00	0.00
area of p-r		0.00	0.00
area of p-rn		0.00	0.00
area of p-g		0.00	0.00
area of rn-r		0.00	0.00
area of rn-p		0.00	0.00
area of rn-g		0.00	0.00
area of g-r		0.00	0.00
area of g-p		332.50	60.05
area of g-rn		0.00	0.00
	TOTAL=	553.75	100

SYSTEM NAME BRUIN CREEK SURVEY UTM 10.4146.62632 MAP# 94 C/9
REACH 1 DATE AUG. 27, 1989 REACH LENGTH 5 km.
WATER TEMP. (C) 10 CREW AM, BB LENGTH SURVEYED 178 m.

HABITAT TYPE	LENGTH (m)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 X	RISE(cm)	RUN (m)	% SLOP	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
RN-G	19	9	12	1	35	75	20	2.5	19	0.13	15	40	25	5	25	HIGH Algae pd
R	11	8	12	10	25	30	25	2.5	11	0.23	10	20	1	1	20	
G	11	9.5	15	15	35	50	25				10	15	1	5	15	
RN	8	7	10	1	50	80	25				15	35	1	5	9	
G	11	5.5	6	15	60	75	25				25	50	1	5	10	
DEBJAM	40	8		30												DEB JAM EXC SP REAR HOLD
G	30	9	12	80	40	50	25	4	20	0.20	20	45	5	5	15	
P	14	2.5	2.5	50	50	100	25				15	70	30	0	20	
G	7	6.5	10	15	20	60	20	2.5	7	0.36	12	40	1	1	5	
RN	8	5.5	10	1	50	75	20	2.5	8	0.31	25	45	1	5	5	
R-G	19	7.5	15	1	35	48	20	4.5	19	0.24	30	35	1	5	1	

surface area	1318.00		
length	178.00		
mean width	7.40		
spawn area	373.82		
%sp hab	28.36		
area of riffle		88.00	6.68
area of pool		35.00	2.66
area of run		100.00	7.59
area of glide		480.50	36.46
area of r-p		0.00	0.00
area of r-rn		0.00	0.00
area of r-g		142.50	10.81
area of p-r		0.00	0.00
area of p-rn		0.00	0.00
area of p-g		0.00	0.00
area of rn-r		0.00	0.00
area of rn-p		0.00	0.00
area of rn-g		152.00	11.53
area of g-r		0.00	0.00
area of g-p		0.00	0.00
area of g-rn		0.00	0.00
area of deb jam		320.00	24.28
TOTAL =		1318.00	100

	sq. m.	%
AREA OF RIFFLE =	173.50	17.38
AREA OF POOL =	35.00	3.51
AREA OF RUN =	191.20	19.16
AREA OF GLIDE =	598.30	59.95
TOTAL =	998.00	100.00

MEAN MAX POOL DEPTH 100.00
MEAN CHANNEL WIDTH = 10.45
MEAN RIFFLE DEPTH = 25.00
MEAN D-90 = 23.00

SYSTEM NAME BRUIN CREEK SURVEY UTM 10.4143.62635 MAP# 94 C/9
REACH 2 WATER 10.0 C. DATE 890831 REACH LENGTH N/A
CREW LENGTH SURVEYED 184 m.

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOP	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
G	29	11	21	0	40	50	40	2.5	29	0.09	5	20	0	10	10	
RN-R	30	5.5	16	0	45	55	35				5	20	0	10	25	DEB JAM 50%STABLE
G-RN	15	6	20	0	35	50	30	7.5	15	0.50	5	1	0	25	0	HIGH ALGAE
R	29	10	16	10	25	60	38	34.5	25	1.38	15	20	0	40	0	RIGHT BANK FAILING
R-G	15	7.5	9.5	15	35	48	40	13.5	7.5	1.80	15	20	0	60	1	
G-P	15	8.5	10	1	50	80	30	2.5	15	0.17	5	45	5	35	5	
R	15	11	13	50	15	25	15	8.5	15	0.57	50	25	0	40	20	SIDE RN 2.5M WIDE .5 DEEP W LOD
G	15	9	10	35	35	50	20	2.5	15	0.17	5	10	0	65	10	
P	8	7.8	8	0	90	150	20	0	8	0.00	0	15	40	70	10	
RN	13	4	5	10	30	55	20	8.5	13	0.65	0	0	0	35	15	
R-G	13	3	3	10	30	50	15	6.5	13	0.50	15	35	1	50	65	SIDE CHANNEL

		sq. m.	%
AREA OF RIFFLE	=	635.30	39.80
AREA OF POOL	=	113.40	7.10
AREA OF RUN	=	187.00	11.71
AREA OF GLIDE	=	660.70	41.39
TOTAL	=	1596.40	100.00

surface area 1557.40
length 184.00
mean width 8.46
spawn area 186.00
Sp hab 11.94

area of riffle	455.00	29.22
area of pool	62.40	4.01
area of run	52.00	3.34
area of glide	454.00	29.15
area of r-p	0.00	0.00
area of r-rn	0.00	0.00
area of r-g	151.50	9.73
area of p-r	0.00	0.00
area of p-rn	0.00	0.00
area of p-g	0.00	0.00
area of rn-r	165.00	10.59
area of rn-p	0.00	0.00
area of rn-g	0.00	0.00
area of g-r	0.00	0.00
area of g-p	177.50	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	1557.40	100

MEAN MAX POOL DEPTH = 150.00
MEAN CHANNEL WIDTH = 13.15
MEAN RIFFLE DEPTH = 20.00
MEAN D-90 = 27.55

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SYSTEM NAME      CARBON CREEK   SURVEY UTM   10.5218.61996          MAP#              93 0/15
REACH 1                         WATER  8.0 C.   DATE  890618        REACH LENGTH 5.7 km.
                                                CREW  BB/DJ/ML       LENGTH SURVEYED 809 m.
LOCATION SURVEY STARTS AT OLD TRAPPER'S CABIN TO FALLS
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HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
P	100	30	34	10	100	250	50	21.5	100	0.22	3	40	30	0	5	BEDROCK POOL 1/2 CHANNEL
G	49	20	40	0	70	100	40	13.5	49	0.28	10	30	50	0	1	UNSTABLE LEFT BANK
R	70	18	45	0	50	80	70	81.5	70	1.16	30	50	10	0	1	UNSTABLE LEFT BANK
R-G	75	30	45	10	40	70	50	44.5	75	0.59	35	40	25	0	1	UNSTABLE LEFT BANK
G	58	28	45	10	60	100	40	14.5	58	0.25	5	70	40	0	1	TRIB RT BANK 9oC 12M ww
R	67	17	45	0	50	80	60	43.5	67	0.65	5	15	15	0	1	UNSTABLE LEFT BANK
R-G	350	33	34	10	50	70	50	12.5	50	0.25	10	60	20	1	1	CENTER BAR 100 X 5 M
P	40	40	45	40	200	600	15	1.5	40	0.04	5	10	70	1	1	TRIB LFT 3Mww BARRIER TO SMALL FISH?

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                                                                 sq. m.      %
surface  area    23403                AREA OF RIFFLE =        10679.00    45.63
length           809.00               AREA OF POOL   =         4600.00    19.66
mean width        28.93               AREA OF RUN    =            0.00     0.00
spawn area      2482.40               AREA OF GLIDE  =         8124.00    34.71
%sp hab           10.61               TOTAL          =        23403.00   100.00
area of riffle             2399.00  10.25
area of pool               4600.00  19.66 MEAN MAX POOL DEPTH  =          425.00
area of run                   0.00   0.00 MEAN CHANNEL WIDTH =             41.63
area of glide              2604.00  11.13 MEAN RIFFLE DEPTH =              50.00
area of r-p                   0.00   0.00 MEAN  D-90         =             46.88
area of r-rn                  0.00   0.00
area of r-g               13800.00  58.97
area of p-r                   0.00   0.00
area of p-rn                  0.00   0.00
area of p-g                   0.00   0.00
area of rn-r                  0.00   0.00
area of rn-p                  0.00   0.00
area of rn-g                  0.00   0.00
area of g-r                   0.00   0.00
area of g-p                   0.00   0.00
area of g-rn                  0.00   0.00
                TOTAL =   23403.00   100
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SYSTEM NAME CARBON CREEK SURVEY UTM 10.5225.61961 MAP# 93 0/15
REACH 3 WATER 8.0 C. DATE 890719 REACH LENGTH 6.6 km.
TURBIDITY 100+ CREW BB/AM LENGTH SURVEYED 518 m.

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90	RISE(cm.	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
RN	30	17	25	1	200	250	65	2.5	30	0.08	0	1	1	5	0	
R	28	17	25	0	80	100	70	27.5	28	0.98	10	25	30	0	0	LG BR DEB JAM
R-G	35	21	25	15	80	100	100	8.5	35	0.24	10	15	0	0	0	SLUMP
R-G	95	18	28	0	80	120	30	8.5	95	0.09	5	20	0	0	0	
R	105	17	28	5	80	150	27	101.5	105	0.97	10	30	10	0	1	
R	55	18	30	1	80	100	65	31.5	55	0.57	15	40	10	0	20	
R	70	35	40	1	35	100	70	28.5	70	0.41	30	70	10	0	20	AT REARING HABITAT
G	50	18	18	10	35	50	50				25	50	0	0	0	
G	[illegible]	12	12	0	60	170	95				10	70	30	10	0	

			sq. m.	%
surface area	10156	AREA OF RIFFLE =	7768.00	76.49
length	518.00	AREA OF POOL =	0.00	0.00
mean width	19.61	AREA OF RUN =	510.00	5.02
spawn area	329.00	AREA OF GLIDE =	1878.00	18.49
%sp hab	3.24	TOTAL =	10156.00	100.00

area of riffle	6301.00	62.04		
area of pool	0.00	0.00	MEAN MAX POOL DEPTH =	
area of run	510.00	5.02	MEAN CHANNEL WIDTH =	25.67
area of glide	900.00	8.86	MEAN RIFFLE DEPTH =	67.00
area of r-p	0.00	0.00	MEAN D-90 =	63.56
area of r-rn	0.00	0.00		
area of r-g	2445.00	24.07		
area of p-r	0.00	0.00		
area of p-rn	0.00	0.00		
area of p-g	0.00	0.00		
area of rn-r	0.00	0.00		
area of rn-p	0.00	0.00		
area of rn-g	0.00	0.00		
area of g-r	0.00	0.00		
area of g-p	0.00	0.00		
area of g-rn	0.00	0.00		
TOTAL =	10156.00	100		

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SYSTEM NAME      CARBON CREEK   SURVEY UTM  10.5233.61913                MAP# 93 0/15
REACH 4                 WATER   9.0 C.      DATE  890718      REACH LENGTH 1.8 km.
                         TURBIDI        200  CREW  BB/ML       LENGTH SURVEYED 599 m.
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HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER			OVERSTREAM COVER		COMMENTS
											FRY	PARR	ADUL	CROWN	OVERHANG	
R	113	30	32	0	50	70	50	27.5	50	0.55	10	70	20	5	5	START OF EF SITE
G	40	22	24	0	60	80	40	4.5	30	0.15	1	70	15	5	5	PHOTO 1
R	214	20	22	0	50	70	70	73.5	65	1.13	20	70	10	5	5	8-10 M WIDE SHALLOW LOW VEL RT BANK
G-R	81	20	25	0	40	80	40	11.5	81	0.14	10	40	20	1	5	S-P BELOW R 12 X 5M CREATED BY BR
R	59	17	25	0	60	80	60	61.5	59	1.04	5	20	20	1	0	HIGH VEL RIFFLE
RN	57	10	30	0	55	80	35	13.5	57	0.24	10	40	10	1	0	
R	35	14	30	0	60	80	60	41.5	35	1.19	10	30	20	5	0	SITE ENDS AT REACH BREAK

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                                                               sq. m.        %
surface   area    12233                AREA OF RIFFLE =       9811.00     80.20
length           518.00                AREA OF POOL   =          0.00      0.00
mean width        23.62                AREA OF RUN    =        570.00      4.66
spawn area         0.00                AREA OF GLIDE  =       1852.00     15.14
%sp hab            0.00                TOTAL          =      12233.00    100.00
area of riffle              9163.00  74.90
area of pool                   0.00   0.00  MEAN MAX POOL DEPTH  =
area of run                  570.00   4.66  MEAN CHANNEL WIDTH =          31.33
area of glide                880.00   7.19  MEAN RIFFLE DEPTH =           55.00
area of r-p                    0.00   0.00  MEAN  D-90         =          50.71
area of r-rn                   0.00   0.00
area of r-g                    0.00   0.00
area of p-r                    0.00   0.00
area of p-rn                   0.00   0.00
area of p-g                    0.00   0.00
area of rn-r                   0.00   0.00
area of rn-p                   0.00   0.00
area of rn-g                   0.00   0.00
area of g-r                 1620.00  13.24
area of g-p                    0.00   0.00
area of g-rn                   0.00   0.00
                  TOTAL    12233.00   100
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SYSTEM NAME        CARBON CREEK   SURVEY   UTM   10.5231.61886                    MAPI 93 O/15
REACH 5                   WATER    8.0 C.        DATE   890719          REACH LENGTH 12.8 km.
                          TURBIDI   100+         CREW   BB/AM           LENGTH SURVEYED 514 m.
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HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 X	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS X
P	62	20	23	0	100	200	40	4.5	65	0.08	10	20	40	40	1	SUB LG + FINES
R	[illegible]	[illegible]	[illegible]	45	45	65	20	4.5	30	0.15	20	10	1	40	1	COBBLE MIX W/ EX SP GRAVEL
P	16	7	7	80	45	55	20				60	15	0	40	10	SIDE CHANNEL POOL
G-R	57	22	22	20	35	45	25	7.5	57	0.08	10	20	0	35	15	MOSS IN STREAM H20 LEVEL HIGH
G	80	20	20	30	45	50	35	7.5	80	0.09	10	20	0	45	20	GOOD GRAVEL BUT >> FINES
RN	66	15	25	65	60	110	25	7.5	66	0.11	1	20	1	35	0	SP SUB LG
R-G	43	12	15	15	40	50	20	14.5	43	0.14	1	10	1	40	0	SOME LOD
RN	10	8	6	1	50	70	15	4.5	10	0.45	0	25	1	0	1	SIDE CHANNEL RUN
R	17	8	8	1	50	70	20	8.5	17	0.50	0	25	1	1	1	SIDE CHANNEL RIFFLE
R	48	35	35	45	20	25	25	5.5	48	0.11	10	20	0	1	1	MID CH BARS
R-G	90	37	39	50	50	200	20	4.5	90	0.05	10	50	45	1	30	MID CH BAR 30M + DEB JAM

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                                                                    NO. M.      %
[illegible]      12302                   AREA OF RIFFLE =          1435.20    11.55
[illegible]      514.00                  AREA OF POOL   =          3478.00    27.99
[illegible]      23.93                   AREA OF RUN    =          1150.12     9.18
[illegible]      4??? ??                 AREA OF GLIDE  =          6838.40    52.27
[illegible]      31.23                   TOTAL          =         12444.00   100.00
area of riffle              136.00   1.11
area of pool               1326.00  10.78  MEAN MAX POOL DEPTH  =    127.50
area of run                1070.00   8.70  MEAN CHANNEL WIDTH   =     23.90
area of glide              3798.00  30.81  MEAN RIFFLE DEPTH    =     50.00
area of r-p                   5.50   0.00  MEAN  D-90           =     24.09
area of r-rn                  0.00   0.00
area of r-g                 516.00   4.19
area of p-r                   0.00   0.00
area of p-rn                  0.00   0.00
area of r-g                3330.40  27.07
area of rn-r                  5.50   0.00
[illegible]
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SYSTEM NAME CHICHOUYENILY SURVEY UTM 10.4921.61294 MAP# 93 O/6
WATER TEMP (C) 10 DATE 910821 REACH LENGTH 22.5 km.
REACH 1 CREW BB AM LENGTH SURVEYED 89 m.
LOCATION CAMPSITES NEAR MOUTH-UPSTRM

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90	RISE (cm)	RUN (m)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
P	10	6	36	10	50	100	10			0	30	60	40	30	0	SLUFF BANK, DEBRIS
R	7	3	36	50	15	23	20			0.6	10	20	0	30	0	CUT BANK
G	11	5	36	20	15	20	20			0.2	10	10	5	30	0	CUT BANK
P	7	3	36	0	20	30	25			0	70	70	10	30	90	TREE OVER STEAM, DEBRIS JAM
R	11	4.5	36	10	10	13	18			0.8	15	5	0	20	0	
P	9	8	12	0	35	50	70			0	25	15	5	15	1	DEBRIS
R	3	3.5	10	10	10	15	20			1	10	0	0	15	0	
P	14	6	10	5	45	65	20			0	20	30	5	10	5	
R	7	8	20	30	8	15	20			0.8	10	5	0	5	0	
P	10	6	18	30	35	100	10			0.9	10	20	5	10	1	

```
                                                         sq. m.      %
surface    area  489.00            AREA OF RIFFLE =      137.00    28.02
length            89.00            AREA OF POOL   =      297.00    60.74
mean width         5.49            AREA OF RUN    =        0.00     0.00
spawn area        72.50            AREA OF GLIDE  =       55.00    11.25
Sun hab           14.83            TOTAL          =      489.00   100.00
area of riffle            137.00  28.02
area of pool              297.00  60.74  MEAN MAX POOL DEPTH  =    69.00
area of run                 0.00   0.00  MEAN CHANNEL WIDTH =      25.00
area of glide              55.00  11.25  MEAN RIFFLE DEPTH =       10.75
area of r-p                 0.00   0.00  MEAN D-90 =               18.30
area of r-ru                0.00   0.00
area of r-g                 0.00   0.00
area of p-r                 0.00   0.00
area of p-ru                0.00   0.00
area of p-g                 0.00   0.00
area of ru-r                0.00   0.00
area of ru-p                0.00   0.00
area of ru-g                0.00   0.00
area of g-r                 0.00   0.00
area of g-p                 0.00   0.00
area of g-ru                0.00   0.00
                  TOTAL-  489.00   100
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SYSTEM NAME CHICHOUYENILY SURVEY UTM 10.4928.61297 MAP# 93 O/6
WATER TEMP. (C) 10 DATE 900822 REACH LENGTH 22.5 km.
REACH 1 (SITE 2) CREW BB AM LENGTH SURVEYED 119 m.
LOCATION LOWEST BRIDGE-UPSTREAM

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90	RISE(cm.	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
G	15	8.5	10	20	10	23	20	0	15	0.00	10	5	0	40	5	RL? PHOTO8
R	7	6	6	50	10	20	20	5	7	0.71	10	5	0	40	15	RL? PHOTO9
P	8	5	9	20	45	75	25	0	8	0.00	10	5	0	40	0	
R	12	3.5		0	12	18	30	7	12	0.58	10	20	1	50	10	RL? PHOTO10
DEBJAM	4	6	10	0	20	25	10	0	4	0.00	30	70	20	30	0	DEBRIS JAM
R	9	3	7	0	12	20	20	26	9	2.89	10	25	0	30	1	RL? PHOTO11
G	10	3	7	10	22	32	20	0	10	0.00	15	5	0	30	1	
R	8	2	8	10	20	60	15	3	8	0.38	10	20	1	40	5	RL? PHOTO12
P	8	5	8	0	40	20	22	0	8	0.00	20	20	10	40	5	
G-R	38	5.5	9	10	15	25	25				25	20	0	30	10	

surface area	597.50		
length	119.00		
mean width	5.02		
spawn area	80.00		
[illegible]	13.39		
area of riffle		127.00	21.26
area of pool		80.00	13.39
area of run		0.00	0.00
area of glide		157.50	26.36
area of r-p		0.00	0.00
area of r-rn		0.00	0.00
area of r-g		0.00	0.00
area of p-r		0.00	0.00
area of p-rn		0.00	0.00
area of p-g		0.00	0.00
area of rn-r		0.00	0.00
area of rn-p		0.00	0.00
area of rn-g		0.00	0.00
area of g-r		209.00	34.98
area of g-p		3.00	0.50
area of g-rn		0.00	0.00
area of debjam		24.00	4.02
	TOTAL =	597.50	100

	sq. m.	%
AREA OF RIFFLE =	210.60	36.72
AREA OF POOL =	80.00	13.95
AREA OF RUN =	0.00	0.00
AREA OF GLIDE =	282.90	49.33
TOTAL =	573.50	100.00

MEAN MAX POOL DEPTH 47.50
MEAN CHANNEL WIDTH = 8.22
MEAN RIFFLE DEPTH = 13.50
MEAN D-90 = 20.70

SYSTEM NAME CHICHOUYENILY SURVEY UTM 10.4930.61298 MAP# 93 O/6
WATER TEMP (C) 10 DATE 900822 REACH LENGTH 32.5 KM
REACH 1 (SITE 1) CREW BB AM LENGTH SURVEYED 145 m.
LOCATION BRIDGE AT HIGHWAY 19 XING-UPSTREAM

HABITAT TYPE	LENGTH (M.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90	RIFFLE(M.)	RUN (M.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
G	11	9	13	0	18	25	20	1	15	0.43	10	5	0	10	1	
R-G	14	6	9	0	15	30	15	1	14	0.21	20	10	0	10	5	
G	17	5	12	0	25	45	25	1	17	0.06	20	15	1	10	15	
RN	5	5	11	0	25	50	25	1	5	0.20	15	30	5	10	20	UCUT BANK
R	12	8	13	0	9	15	40	15	11	1.92	20	25	0	10	6	RLT PHOTO16
R-G	13	4	9	0	10	50	40	1	12	0.08	15	25	0	20	0	
G	15	4	12	0	22	40	12	48	15	2.67	15	25	0	20	8	
DEBJAM	18	16	20	5	30	45	20				45	40	40	20	10	RLT PHOTO17
R	13	3	22	0	15	25	25	19	14	0.71	20	10	0	20	8	
RG	5	2.5	15	0	40	50	10	3	5	0.60	15	60	20	30	10	DEBRIS,UCUT BANKS
																END SURVEY GRIZZ TRACKS

				sq. m.	%
wetted area	1036.35		AREA OF RIFFLE =	248.40	34.67
length	145.00		AREA OF POOL =	28.80	4.02
mean width	7.10		AREA OF RUN =	37.50	5.23
spawn area	41.20		AREA OF GLIDE =	401.80	56.08
%sp hab	4.[illegible]		TOTAL =	716.50	100.00

area of riffle 198.30 19.03
area of pool 0.99 0.09 MEAN MAX POOL DEPTH =
area of run 37.50 3.60 MEAN CHANNEL WIDTH = 12.70
area of glide 591.00 56.54 MEAN RIFFLE DEPTH = 15.33
area of r-g 0.00 0.00 MEAN D-90 = 26.50
area of [illegible] [illegible] 4.17
area [illegible] [illegible] 2.11
area of [illegible] [illegible] 0.00
area of [illegible] 0.00 0.00
area of g-r 46.00 4.42
area of rn-r 0.00 0.00
area of rn-p 0.00 0.00
area of rn-g 0.00 0.00
area of g-p 0.00 0.00
area of p-g 0.00 0.00
area of g-rn 0.00 0.00
area of debjam 114.00 10.94
TOTAL 1042.2 100

SYSTEM NAME CLEARWATER SURVEY UTM 10.4900.61930 MAP# 93 O/14 START AT TRIB ON RT WITH FALLS
REACH 1 WATER 7 DATE 890927 REACH LENGTH 9.9 km. UPPER LIMIT OF NAVIGATION
TURBIDITY 100+ CREW BB LENGTH SURVEYED 864 m.

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90	SIDE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
[illegible]	65	24	33	5	100	200	20			0.10	10	40	40	1	0	ALL SP SUB LARGE
[illegible]	32	12	23	0	50	70	70			0.40	30	60	10	1	0	
[illegible]	85	12	23	10	100	200	25			0.20	10	40	20	1	0	D R POOL
[illegible]	75	28	45	0	25	40	40	50	35	2.57	10	50	0	1	0	
[illegible]	41	28	43	10	15	250	35			0.20	10	30	50	1	0	RR POOL
[illegible]	117	35	45	0	40	75	45	185	125	0.85	10	60	30	0	0	START OF EF SITE
[illegible]	14	[illegible]	15	0	50	60	40			0.40	20	60	10	0	2	END OF EF SITE
[illegible]	41	12	15	0	30	50	60			2.00	10	40	10	0	0	
[illegible]	50	1	10	20	50	75	30			0.40	25	40	0	0	0	
[illegible]	40	[illegible]	10	0	100	250	60			0.17	10	40	40	0	0	UR POOL
[illegible]	65	10	90	0	70	120	40			0.80	10	40	20	0	0	RR RUN
R	65	60	80	0	20	42	40			2.00	15	60	5	0	0	
R+G	81	35	50	0	30	50	30			3.60	15	40	10	0	0	
P	65	34	24	10	150	250	65			0.20	10	40	10	0	0	RP POOL
																OLD FLOOD CL ENTER 200 M UP
																STUMP ON RT BNK

				sq. m.	%
[illegible]	[illegible]		AREA OF RIFFLE =	[illegible]	47.34
length	864.00		AREA OF POOL =	4510.00	22.54
mean width	[illegible]		AREA OF RUN =	[illegible]	1.15
[illegible]	[illegible]		AREA OF GLIDE =	[illegible]	[illegible]
[illegible]	[illegible]		TOTAL =	[illegible]	[illegible]
[illegible]		[illegible]	[illegible]		
area of pool		4510.00	22.54	MEAN MAX POOL DEPTH =	[illegible]
area of run		250.00	1.15	MEAN CHANNEL WIDTH =	[illegible]
area of glide		4864.00	22.13	MEAN RIFFLE DEPTH =	[illegible]
area of [illegible]		0.00	0.00	MEAN D-90 =	[illegible]
area of [illegible]		0.00	0.00		
area of [illegible]		[illegible]	15.59		
area of [illegible]		0.00	0.00		
[illegible]		0.00	0.00		
[illegible]		0.00	0.00		
[illegible]		0.00	0.00		
[illegible]		[illegible]	[illegible]		
[illegible]		[illegible]	[illegible]		
[illegible]		[illegible]	[illegible]		

SYSTEM NAME CLEARWATER SURVEY UTM 10.4928.61855 MAP# 93 0/14
REACH 2 WATER 7.5 C. DATE 890928 REACH LENGTH 11.5 km.
TURBIDITY 100+ CREW BB LENGTH SURVEYED 634 m.

HABITAT TYPE	LENGTH (m)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90	RIFFLE (m)	RUN (m)	% SLOPE	INSTREAM COVER FRY	INSTREAM COVER PARR	INSTREAM COVER ADUL	OVERSTREAM COVER CROWN	OVERSTREAM COVER OVERHANG	COMMENTS
[illegible]	[illegible]	14	16	0	30	50	45			0.60	20	80	10	30	0	START OF EF SITE
R	45	11	16	10	30	40	30			1.00	5	80	0	20	1	SP SUB LARGE
G-R	26	16	21	5	30	50	30			0.60	25	80	0	25	2	SP SUB LARHGE
R-C	87	12	21	5	30	40	40			0.80	30	80	0	25	2	SP SUB LARGE
C	87	5	21	10	15	25	50			0.80	80	30	0	10	5	SIDE CHANNEL
R	26	17	18	10	20	30	40			1.00	15	70	0	40	1	PHOTO 13
G	103	17	18	10	50	100	40			0.50	10	70	20	40	0	BR SLUMP SP SUB LG
RN	27	12	19	0	60	120	60			0.70	15	80	40	20	0	ON LEFT SHALE
R	127	16	25	15	25	30	30			1.00	20	80	0	30	1	SP SUB MIXED
G	93	22	24	30	15	25	35			0.60	80	30	0	30	0	SP SUB LARGE
G-P	60	20	24	30	60	150	20			0.20	20	50	25	30	0	SP SUB LARGE PHOTO 14

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                                                      sq. m.      %
surface  area    10745            AREA OF RIFFLE =   3985.80   35.65
length          634.00            AREA OF POOL   =    480.00    4.29
mean width       16.95            AREA OF RUN    =    324.00    2.90
spawn area     1663.90            AREA OF GLIDE  =   6390.20   57.16
sub mean         15.49            TOTAL          =  11180.00  100.00
area of riffle           2969.00 27.63
area of pool                0.00  0.00 MEAN MAX POOL DEPTH  =
area of run               324.00  3.02 MEAN CHANNEL WIDTH =    22.30
area of glide            4232.00 39.39 MEAN RIFFLE DEPTH =     25.00
area of r-p                 0.00  0.00 MEAN  D-90        =     38.18
area of r-rn                0.00  0.00
area of r-g              1044.00  9.72
area of p-r                 0.00  0.00
area of p-rn                0.00  0.00
area of p-g                 0.00  0.00
area of rn-r                0.00  0.00
area of rn-p                0.00  0.00
[illegible]                 0.00  0.00
area of g-r          [illegible] [illegible]
area of g-p          [illegible] 11.1[illegible]
area of g-rn                0.00  0.00
                 TOTAL     10745   100
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SYSTEM NAME COLLINS CREEK SURVEY UTM 10.4152.62564 MAP# 94 C/8
TEMPERATURE AIR WATER 11.0 C. DATE 890823 REACH LENGTH 5.0 km.
REACH 1 TURBIDI 100 CREW BB/AM LENGTH SURVEYED 122 m.

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADULT	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
R	21	6.5	11	1	30	40	25	21.5	21	1.02	15	15	1	1	5	
G	18	9.5	12	1	35	110	30				40	50	5	1	35	
R	11	4.5	5	30	35	50	20				20	35	1	5	8	
RN	10	5	15	10	50	80	15				20	50	20	10	15	
R	8	5.5	9	50	40	50	20	2.5	8.5	0.29	30	50	1	5	0	
G	5.5	8	12	80	30	48	10				10	15	1	1	1	
RN-G	8.5	5.5	9.5	5	80	110	17	2.5	8.5	0.29	35	65	35	15	10	
V	21	3	3.5	5	20	25	20	2.5	21	0.12	10	5	0	10	0	
P	21	4	6.5	1	70	80	1	2.5	21	0.12	60	90	30	10	35	

			sq. m.	%
surface area	653.75	AREA OF RIFFLE =	230.00	35.18
length	122.00	AREA OF POOL =	102.70	15.71
mean width	5.36	AREA OF RUN =	78.05	11.94
[illegible]	86.1[illegible]	AREA OF GLIDE =	243.00	37.17
[illegible]	13.17	TOTAL =	653.75	100.00

area of riffle	230.00	35.18		
area of pool	84.00	12.85	MEAN MAX POOL DEPTH	80.00
area of run	50.00	7.65	MEAN CHANNEL WIDTH =	9.06
area of glide	243.00	37.17	MEAN RIFFLE DEPTH =	35.00
area of r-p	0.00	0.00	MEAN D-90 =	19.63
area of r-rn	0.00	0.00		
area of r-g	0.00	0.00		
area of p-r	0.00	0.00		
area of p-rn	0.00	0.00		
area of p-g	0.00	0.00		
area of rn-r	0.00	0.00		
area of rn-g	46.75	7.15		
area of rn-p	0.00	0.00		
[illegible]	0.00	0.00		
[illegible]	0.00	0.00		
[illegible]	0.00	0.00		
TOTAL	653.75	100		

SYSTEM NAME CUT THUMB SURVEY UTM 10.4807.61553 MAP# 93 0/11
WATER TEMP (C) 7.5 DATE SEPT 26 90 REACH LENGTH 2.5 km
REACH 1 CREW BR AM DJ LENGTH SURVEYED 323 m.
LOCATION 20M UPSTREAM OF BRIDGE XING-UPSTREAM

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
R	21	12	17	0	30	50	70	4	21	0.19	20	80	10	30	0	
P	12	9	16	0	50	110	65	1	12	0.08	10	80	30	30	0	BEDROCK
CA	8	6	16	0	40	75		32	8	4.00	5	40	20	30	0	BEDROCK STEPS, SO NO D-90
G-R	10	8	12	1	35	50	55	10	10	1.00	10	50	10	30	0	
R	75	9	13	0	30	40	50	71	62	1.15	25	60	0	40	1	
G	80	10	18	5	30	40	35	2	30	0.07	20	30		40	1	
R	55	10	14	1	25	40	45	48	55	0.87	20	40		30	5	
R	15	15	17	1	30	50	40	1	15	0.07	20	40	0	30	0	
[illegible]	30	15	18	1	20	40	40	23	30	0.77	20	40	0	30	0	
R	17	13	18	5	30	50	45	1	17	0.06	20	40	10	30	0	

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                                                       sq. m.        %
surface   area  3409.00            AREA OF RIFFLE =   1959.00     58.29
length           323.00            AREA OF POOL   =    108.00      3.21
mean width        10.55            AREA OF RUN    =      0.00      0.00
spawn area        64.10            AREA OF GLIDE  =   1294.00     38.50
%sp hab            1.88            TOTAL          =   3361.00    100.00
area of riffle              1927.00 56.53
area of pool                 108.00  3.17 MEAN MAX POOL DEPTH  =   110.00
area of run                    0.00  0.00 MEAN CHANNEL WIDTH =      15.90
area of glide               1246.00 36.55 MEAN RIFFLE DEPTH =       26.25
area of r-p                    0.00  0.00 MEAN D-90 =               49.44
area of r-rn                   0.00  0.00
area of r-g                    0.00  0.00
area of p-r                    0.00  0.00
area of p-rn                   0.00  0.00
area of p-g                    0.00  0.00
area of rn-r                   0.00  0.00
area of rn-p                   0.00  0.00
area of rn-g                   0.00  0.00
area of g-r                   80.00  2.35
area of g-p                    0.00  0.00
area of g-rn                   0.00  0.00
area of ca                    48.00  1.41
                  TOTAL =   3409    100
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SYSTEM NAME DAVIS SURVEY UTM 10.4106.62706 MAP# 94 C/9
REACH 1 WATER 8.5 C. DATE 890830 REACH LENGTH 4.8 km.
TURBID 60 CREW BB/AM LENGTH SURVEYED 225 m.

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
G	90	13.5	16	1	60	100	50				5	30	10	25	10	FLOOD SIGNS 1 M
R-RN	45	12.5	18	1	55	70	45	16.5	45	0.37	10	30	1	35	10	
RN-R	90	15	20	10	45	60	55				10	30	0	40	10	CONTINUOUS BOULD RIFFLE FOR SEVERAL KM

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                                                     sq. m.      %
surface  area  3127.50          AREA OF RIFFLE =     877.50   28.06
length          225.00          AREA OF POOL   =       0.00       0
mean width       13.90          AREA OF RUN    =    1035.00   33.09
crown area      152.78          AREA OF GLIDE  =    1215.00   38.85
sp hab            4.88          TOTAL          =    3127.50     100
area of riffle             0.00  0.00
area of pool               0.00  0.00 MEAN MAX POOL DEPTH  =
area of run                0.00  0.00 MEAN CHANNEL WIDTH =          18
area of glide           1215.00 38.85 MEAN RIFFLE DEPTH =
area of r-p                0.00  0.00 MEAN  D-90        =           50
area of r-rn             562.50 17.99
area of r-g                0.00  0.00
area of p-r                0.00  0.00
area of p-rn               0.00  0.00
area of p-g                0.00  0.00
area of rn-r            1350.00 43.17
area of rn-p               0.00  0.00
area of rn-g               0.00  0.00
area of g-r                0.00  0.00
area of g-p                0.00  0.00
area of g-rn               0.00  0.00
             TOTAL =    3127.50   100
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SYSTEM NAME        DRESSER          SURVEY U  10.3750.27700          MAP#              94 B/1
REACH  1                      WATER    15.0 C.   DATE  890714          REACH LENGTH 1.0 km.
                              TURBIDITY  100+    CREW  BB/DJ/ML        LENGTH SURVEYED 181 m.
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HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING GRAVELS	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	[illegible] SIZE(cm.)	[illegible] (m.)	% COVER	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
P	18	8	6	5	30	50	30	59.5	29	2.11	20	40	10	1	5	RT BK UCUT
G	11	8	9	10	25	40	30	11.5	11	1.05	30	50	20	10	5	RT BK UCUT
RN	9	5	5	20	40	55	35	3.5	8	0.44	10	40	20	10	5	SOME SP GRAVEL RT BK UCUT
R	10	4	4	8	30	45	35	34.5	10	1.92	0	30	10	50	80	BOTH BNKS UCUT
R+G	15	6	6	5	30	45	40	15.5	15	1.03	20	20	10	5	20	
G	14	6	6	40	25	50	30	5.0	14	0.39	10	30	10	50	50	SP SUB LG
G	18	2	3	10	15	30	25	14.5	18	0.81	70	30	0	1	5	10 CM CA IN MIDDLE 15 RR E.F.,(SIDECHANNEL)
R	28	1.5	2.5	0	12	20	20	25.5	28	0.99	10	60	0	5	30	IN THESE SITES ,(SIDE CHANNEL)
P	4	2	4	8	25	50	30	0	4	0.00	40	70	20	50	80	RT BK UCUT ,(SIDE CHANNEL)
G	22	9	8	25	20	40	20	10.5	22	0.48	10	20	10	1	10	SP SUB SM
RN	14	4	6.5	15	15	40	20	7.5	14	0.54	10	15	15	5	15	RT BK UCUT
R	6	4	4.5	9	25	40	25	5.5	6	0.92	0	10	0	1	1	HIGH VELOCITY
RN	12	4	7	10	40	65	25	9.5	13	0.73	15	30	20	40	25	SM POOL IN RUN VIA LOD

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                                                            SQ. M.       %
surface  area    [illegible]          AREA OF RIFFLE =      500.00     43.37
length              181.00            AREA OF POOL   =       16.00      1.39
mean width            4.65            AREA OF RUN    =      148.00     12.84
spawn area          131.10            AREA OF GLIDE  =      489.00     42.41
%sp hab        [illegible]            TOTAL          =     1153.00    100.00
area of riffle               [illegible]  38.04
area of pool                 [illegible]  [illegible]  MEAN MAX POOL DEPTH =   50.00
area of run                  [illegible]  [illegible]  MEAN CHANNEL WIDTH  =    5.88
area of glide                [illegible]  [illegible]  MEAN RIFFLE DEPTH   =   24.25
area of r-p                  [illegible]  [illegible]  MEAN  D-90          =   [illegible]
area of r-rn                 [illegible]  [illegible]
area of r-g                  [illegible]   8.41
area of p-r                  [illegible]  [illegible]
area of p-rn                 [illegible]  [illegible]
area of p-g                  [illegible]  [illegible]
area of rn-r                 [illegible]  [illegible]
area of rn-p                 [illegible]  [illegible]
area of rn-g                 [illegible]  [illegible]
area of g-r                  [illegible]  [illegible]
area of g-p                  [illegible]  [illegible]
area of g-rn                 [illegible]  [illegible]
                    TOTAL =  [illegible]   100
```

SYSTEM NAME DRESSER SURVEY UTM 10.5360.62297 MAP# 94 B/1
REACH 2 WATER DATE 890719 REACH LENGTH 1 km.
TURBIDITY 100+ CREW BB LENGTH SURVEYED 236 m.
UPSTREAM FROM BEAVER DAMS

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.	RUN (m.)	% SLOPE	INSTREAM COVER FRY	INSTREAM COVER PARR	INSTREAM COVER ADUL	OVERSTREAM COVER CROWN	OVERSTREAM COVER OVERHANG	COMMENTS
R	30	8	8	10	17	22	30	17	30	0.57	40	70	0	20	15	
G-R	30	5	5	0	20	30	30	9	30	0.30	20	40	0	40	10	
R	33	6	6	10	30	42	40	39.5	33	1.20	20	60	0	40	10	
R	59	6	6	0	30	45	40				30	70	0	10	15	
G	16	4	4	30	23	27	32				1	30	0	1	5	
R	30	3	3	0	25	15	42	36	30	1.20	40	80	0	20	40	MOSS ON ROCKS MAY DRY
CA	3	3	3	0									0			
R	35	8	8	10	27	32	50	42.5	35	1.21	30	60	0	15	20	

surface area	1385.00		
length	236.00		
mean width	5.87		
spawn area	24.00		
%sp hab	1.73		
area of riffle		1162.00	83.90
area of pool		0.00	0.00
area of run		0.00	0.00
area of glide		64.00	4.62
area of r-p		0.00	0.00
area of r-rn		0.00	0.00
area of r-g		0.00	0.00
area of p-r		0.00	0.00
area of p-rn		0.00	0.00
area of p-g		0.00	0.00
area of rn-r		0.00	0.00
area of rn-p		0.00	0.00
area of rn-g		0.00	0.00
area of g-r		150.00	10.83
area of g-p		0.00	0.00
area of g-rn		0.00	0.00
area of ca		9.00	0.65
	TOTAL =	1385.00	100

	sq. m.	%
AREA OF RIFFLE =	1222.00	88.81
AREA OF POOL =	0.00	0.00
AREA OF RUN =	0.00	0.00
AREA OF GLIDE =	154.00	11.19
TOTAL =	1376.00	100.00

MEAN MAX POOL DEPTH =
MEAN CHANNEL WIDTH = 5.38
MEAN RIFFLE DEPTH = 23.80
MEAN D-90 = 37.71

SYSTEM NAME DUCKITE CREEK SURVEY UTM 10.4924.61991 MAP# 93 0/14
REACH 1 WATER DATE 890927 REACH LENGTH 5.1 km. VERY LOW SPAWNING POTENTIAL LIMITED WINTER HABITAT
TURBIDITY 100+ CREW BB LENGTH SURVEYED 197 m.

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.	RUN (m.)	% SLOPE	INSTREAM COVER			OVERSTREAM COVER		COMMENTS
											FRY	PARR	ADUL	CROWN	OVERHANG	
G	15	9	14	0	30	35	30			0.50	20	40	0	0	0	START OF EF SITE
R	60	11	14	10	20	30	70			1.20	20	70	0	0	0	SP SUB LARGE
G	17	9	14	20	25	30	60			0.40	30	60	10	0	0	SP SUB MOD
R	15	5	14	0	30	50	60			2.00	10	70	10	0	0	PHOTO 8
R	17	12	14	0	20	30	40			1.00	30	70	0	0	0	
R-G	22	8	14	0	30	50	70			0.80	10	70	0	0	0	
R	9	8	10	0	30	40	40			1.50	10	80	0	0	0	
G	22	8	12	30	40	60	20			0.50	10	30	0	0	0	SP SUB MOD
P-RN	8	5	12	0	100	150	40			0.20	10	70	70	20	0	
RN	12	5	12	0	50	80	60			0.80	10	40	10	10	0	PHOTO 10

surface area	1751.00			
length	197.00			
mean width	8.89			
spawn area	149.40			
%sp hab	8.53			

	sq. m.	%
AREA OF RIFFLE =	1116.60	63.77
AREA OF POOL =	24.00	1.37
AREA OF RUN =	76.00	4.34
AREA OF GLIDE =	534.40	30.52
TOTAL =	1751.00	100.00

area of riffle	1011.00	57.74
area of pool	0.00	0.00
area of run	60.00	3.43
area of glide	464.00	26.50
area of r-p	0.00	0.00
area of r-rn	0.00	0.00
area of r-g	176.00	10.05
area of p-r	0.00	0.00
area of p-rn	40.00	2.28
area of p-g	0.00	0.00
area of rn-r	0.00	0.00
area of rn-p	0.00	0.00
area of rn-g	0.00	0.00
area of g-r	0.00	0.00
area of g-p	0.00	0.00
area of g-rn	0.00	0.00
TOTAL =	1751	100

MEAN MAX POOL DEPTH =
MEAN CHANNEL WIDTH = 13.40
MEAN RIFFLE DEPTH = 25.00
MEAN D-90 = 49.00

SYSTEM NAME DUNLEVY CREEK SURVEY UTM 10.5380.62256 MAP# 94 B/1
REACH 1 WATER 11.5 C. DATE 890713 REACH LENGTH 4.8 km
TURBIDITY 100+ CREW BB/DJ/ML LENGTH SURVEYED 216 m. JUST UPSTREAM FROM TRAP SITE

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
R-G	19	12	12	10	30	45	40	10.5	19	0.55		30		30	1	EF SITE
RN	28	10	10	1	65	110	60	76.5	28	2.73		70		35	10	
R	9	12	12	10	15	25	25	82.5	14	5.89		10		20	1	
G	21	9	9	20	25	40	25	5.5	21	0.26		10		10	1	
R	13	9	9	10	20	35	20	11.5	13	0.88		10		10	10	SUBS NOT SORTED
R	45	6	6	20	30	40	20	41.5	45	0.92		10		40	15	SIDE CH W\ MID CH BAR 5M
R-G	41	12	12	10	30	40	30	19.5	41	0.48		15		10	5	
G-RN	30	8	8	1	40	60	40	16.5	30	0.55		20		5	1	MAIN ST LG ISLAND
R	55	9	9	5	30	50	50	108.5	55	1.97		60		5	15	WITH TREES APPROX 5-15 M WIDE
G	45	8	8	1	25	50	20	22.5	25	0.90		80		15	15	SIDE CHANNEL
R	22	7	7	1	30	45	50	58.5	22	2.66		60		10	15	SIDE CHANNEL

surface area	2933.00		
length	216.00		
mean width	13.58		
spawn area	221.39		
%sp hab	7.55		
area of riffle		1144.00	39.00
area of pool		0.00	0.00
area of run		280.00	9.55
area of glide		549.00	18.72
area of r-p		0.00	0.00
area of r-rn		0.00	0.00
area of r-g		720.00	24.55
area of p-r		0.00	0.00
area of p-rn		0.00	0.00
area of p-g		0.00	0.00
area of rn-r		0.00	0.00
area of rn-p		0.00	0.00
area of rn-g		0.00	0.00
area of g-r		0.00	0.00
area of g-p		0.00	0.00
area of g-rn		240.00	8.18
	TOTAL =	2933.00	100

	sq. m.	%
AREA OF RIFFLE =	2000.00	53.81
AREA OF POOL =	0.00	0.00
AREA OF RUN =	376.00	10.12
AREA OF GLIDE =	1341.00	36.08
TOTAL =	3717.00	100.00

MEAN MAX POOL DEPTH =
MEAN CHANNEL WIDTH = 12.75
MEAN RIFFLE DEPTH = 25.00
MEAN D-90 = 34.55

SYSTEM NAME DUNLEVEY CREEK SURVEY UTM 10.5375.62276 MAP# 94 B/1
REACH 1 WATER 13.0 C. DATE 890713 REACH LENGTH 4.8 km.
TURBIDITY 100+ CREW BB/DJ/ML LENGTH SURVEYED 223 m. AT CONFLUENCE OF DRESSER

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER			OVERSTREAM COVER		COMMENTS
											FRY	PARR	ADUL	CROWN	OVERHANG	
R	30	6	7	1	45	70	50	62.5	30	2.08	10	60	10	20	10	
RN	11	6	7	1	35	70	30	11.5	11	1.05	20	60	20	30	10	
R	12	6	8	1	30	40	25	29.5	12	2.46	10	60	1	5	1	
R-G	9	8	9	1	35	50	40	7.5	9	0.83	10	40	10	5	10	
R	32	7	14	5	30	40	40	44.5	32	1.39	10	50	10	0	1	RT BANK FAILING
R	55	3.5	5	15	35	20	30	81.5	25	3.26	20	45	1	30	10	SIDE CH
G	30	4	5	50	15	25	20				30	1	0	80	80	SIDE CH
R-G	18	4	4.5	15	15	25	20				30	10	0	80	80	SIDE CH
R	10	2	8	1	20	30	40				10	40	1	80	80	SIDE CH
G	32	10	12	15	25	40	30	20.5	32	0.64	20	20	1	10	10	
RN	14	5	12	1	45	130	30	5.5	14	0.39	1	60	30	0	1	SIDE CH ENTERS HERE
R	32	8	14	5	30	60	35	22.5	32	0.70	10	20	10	1	1	CH W ROOTED VEG ON BAR
G-R	32	4	5	1	15	55	18	55.5	32	1.73	40	20	1	10	0	LOD + CUT BANK, (SIDE CHANNEL
R	20	10	12	20	20	50	25	18.5	20	0.93	15	25	10	1	1	
G	13	11	14	60	20	60	15	11.5	13	0.88	10	10	1	0	1	
RN-P	18	7	9	1	50	90	30	3.5	18	0.19	10	40	30	1	1	POOL AT LOWER FLOWS

		sq. m.	%
surface area	2261.50		
length	223.00		
mean width	10.14		
spawn area	304.82		
%sp hab	13.48		
AREA OF RIFFLE =		1250.10	50.92
AREA OF POOL =		50.40	2.05
AREA OF RUN =		211.60	8.62
AREA OF GLIDE =		943.00	38.41
TOTAL =		2455.10	100.00

area of riffle	1144.50	50.61
area of pool	0.00	0.00
area of run	136.00	6.01
area of glide	583.00	25.78
area of r-p	0.00	0.00
area of r-rn	0.00	0.00
area of r-g	144.00	6.37
area of p-r	0.00	0.00
area of p-rn	0.00	0.00
area of p-g	0.00	0.00
area of rn-r	0.00	0.00
area of rn-p	126.00	5.57
area of rn-g	0.00	0.00
area of g-r	128.00	5.66
area of g-p	0.00	0.00
area of g-rn	0.00	0.00
TOTAL =	2261.50	100

MEAN MAX POOL DEPTH =
MEAN CHANNEL WIDTH = 13.23
MEAN RIFFLE DEPTH = 30.00
MEAN D-90 = 29.98

SYSTEM NAME DUNLEVY CREEK SURVEY UTM 10.5375.62276 MAP# 94 B/1
REACH 1 WATER 12.5 C. DATE 8900714 REACH LENGTH 4.8 km.
TURBIDITY 100+ CREW BB/DJ/ML LENGTH SURVEYED 255m. 0.9 KM DOWNSTREAM FROM DRESSER

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
G	64	11	11.5	10	30	50	30	27.5	64	0.43	15	30	10	10	5	TRIB 10 C RT BANK
R	43	12	16	10	30	60	40	18.5	43	0.43	10	50	20	30	25	LOD RT BANK U CUT
RN	11	9	11	25	60	100	30	5.5	11	0.50	15	80	50	10	30	POOL AT LOW FLOWS FISH OBS
G-R	45	7	14	1	30	50	25	21.5	45	0.48	10	10	5	0	1	R BANK FAILING W LOD GRAVEL
R	72	11	13	1	30	40	35	53.5	72	0.74	10	20	10	0	1	L BANK UCUT DRY CH RT
G	20	9	13	1	25	40	25	6.5	20	0.33	10	10	0	0	1	BR SHELF RT BANK

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                                                                sq. m.      %
surface   area 2606.00                 AREA OF RIFFLE =        1434.00   55.03
length          255.00                 AREA OF POOL   =           0.00    0.00
mean width       10.22                 AREA OF RUN    =          99.00    3.80
crown area      159.62                 AREA OF GLIDE  =        1073.00   41.17
Sxp hab           6.13                 TOTAL          =        2606.00  100.00
area of riffle               1308.00 50.19
area of pool                    0.00  0.00 MEAN MAX POOL DEPTH  =
area of run                    99.00  3.80 MEAN CHANNEL WIDTH   =         13.08
area of glide                 884.00 33.92 MEAN RIFFLE DEPTH    =         30.00
area of r-p                     0.00  0.00 MEAN  D-90           =         30.83
area of r-rn                    0.00  0.00
area of r-g                     0.00  0.00
area of p-r                     0.00  0.00
area of p-rn                    0.00  0.00
area of p-g                     0.00  0.00
area of rn-r                    0.00  0.00
area of rn-p                    0.00  0.00
area of rn-g                    0.00  0.00
area of g-r                   315.00 12.09
area of g-p                     0.00  0.00
area of g-rn                    0.00  0.00
                   TOTAL =      2606   100
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SYSTEM NAME   EMERSLUND CREEK   SURVEY U.T.M. POINT   10.4917.62373   MAP #94 B/6
WATER TEMP (C)   9.5   DATE   AUG. 8, 1991   REACH LENGTH 2.3 km.
REACH   1   CREW   A.L. / A.M.   LENGTH SURVEYED 486.5 m.
LOCATIO   from confluence of Nabesche and Emerslund to 500 m. up Emerslund

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	SLOPE RISE(cm.	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
R	95	10	12	5	35	50	16	58	30	1.93	1	5	0	10	2	
RN	17	6	10	5	55	90	13	11	17	0.65	0	1	5	0	0	
R	50	8	9	1	40	50	23	22	50	0.44	1	2	0	5	0	algae growth on rocks
R-G	17.5	9	11	10	50	80	18	2.5	17.5	0.14	10	10	5	10	3	aquatic invertebrates observe
R	17	6.5	15	1	60	70	16	14	17	0.82	0	2	1	15	8	
G-R	30	7.5	12	30	40	70	12	7.5	30	0.25	2	5	0	15	1	
R-G	60	8.5	10.5	20	35	60	15	12.5	60	0.21	2	2	0	2	2	
R	75	8	11	0	25	40	22	33	75	0.44	2	2	0	15	10	
G	35	10	13	0	40	80	18	4	35	0.11	10	50	10	15	15	
R	70	17	18	0	30	35	15	63	70	0.90	1	5	1	10	15	
P	20	7.5	9.5	0	70	110	22	1	20	0.05	15	25	25	5	20	debris jam at pool

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                                                          sq. m.       %
surface  area  4745.00          AREA OF RIFFLE =         3741.00    78.84
length          486.50          AREA OF POOL   =          150.00     3.16
mean width        9.75          AREA OF RUN    =          102.00     2.15
spawn area      242.96          AREA OF GLIDE  =          752.00    15.85
%sp hab           5.12          TOTAL          =         4745.00   100.00
area of riffle          3250.50    68.50
area of pool             150.00     3.16  MEAN MAX POOL DEPTH  =  110.00
area of run              102.00     2.15  MEAN CHANNEL WIDTH =     11.73
area of glide            350.00     7.38  MEAN RIFFLE DEPTH =      34.00
area of r-p                0.00     0.00  MEAN D-90 =              17.09
area of r-rn               0.00     0.00
area of r-g              667.50    14.07
area of p-r                0.00     0.00
area of p-rn               0.00     0.00
area of p-g                0.00     0.00
area of rn-r               0.00     0.00
area of rn-p               0.00     0.00
area of rn-g               0.00     0.00
area of g-r              225.00     4.74
area of g-p                0.00     0.00
area of g-rn               0.00     0.00
              TOTAL =   4745        100
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SYSTEM NAME GAFFNEY CREEK SURVEY UTM 10.4270.61550 MAP# 93 N/9
REACH 1 WATER 17.5 C. DATE 890908 REACH LENGTH 2.5 km.
CREW AM/ML/OF LENGTH SURVEYED 310 m.

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
R	42	16	24	0	45	55	50	36.5	42	0.87	20	30	0	25	5	COBBLE BAR RT BANK
G	68	19	21	10	40	60	35	9.5	68	0.14	1	30	5	25	10	EF SITE SP SUB LG
R	200	16	17.5	1	35	60	40	37.5	50	0.75	20	70	0	30	10	GOOD BOULDER COVER

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                                                          sq. m.      %
surface  area 5164.00            AREA OF RIFFLE =        3872.00   74.98
length         310.00            AREA OF POOL   =           0.00    0.00
mean width      16.66            AREA OF RUN    =           0.00    0.00
spawn area     161.20            AREA OF GLIDE  =        1292.00   25.02
%sp hab          3.12            TOTAL          =        5164.00  100.00
area of riffle          3872.00 74.98
area of pool               0.00  0.00 MEAN MAX POOL DEPTH =
area of run                0.00  0.00 MEAN CHANNEL WIDTH =            20.83
area of glide           1292.00 25.02 MEAN RIFFLE DEPTH =             40.00
area of r-p                0.00  0.00 MEAN  D-90          =           41.67
area of r-rn               0.00  0.00
area of r-g                0.00  0.00
area of p-r                0.00  0.00
area of p-rn               0.00  0.00
area of p-g                0.00  0.00
area of rn-r               0.00  0.00
area of rn-p               0.00  0.00
area of rn-g               0.00  0.00
area of g-r                0.00  0.00
area of g-p                0.00  0.00
area of g-rn               0.00  0.00
                TOTAL =    5164   100
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SYSTEM NAME LAFFERTY CREEK SURVEY UTM 10.4208.62472 MAP# 94 C/8
REACH 2 WATER 11.0 C. DATE 890823 REACH LENGTH 1.5 km.
TURBIDI 100 CREW BB/AM LENGTH SURVEYED 231.5 m.

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
R	42	6.5	7.5	10	30	45	28				0	10	0	10	8	
RN	14	6	8	5	45	80	22	8	14	0.57	5	30	20	5	40	BEAVER DAM PASSIBLE
G	16	7	8	0	70	120		5	16	0.31	10	25	20	0	10	
G	8	8	12	50	35	45	20				10	15	0	5	0	GOOD GRAVEL BUT >>% FINES
P	7.5	7.5	13	5	65	150	25				10	40	25	0	1	
R	19	8.5	9	50	35	45	35				20	30	0	35	1	
G-R	95	8.5	8.5	35	55	70	45				25	35	1	25	30	
R	30	4.5	12	10	30	40	60	49	30	1.63	15	25	0	0	15	

```
                                                            sq. m.       %
surface  area  1693.25           AREA OF RIFFLE =          892.50    52.71
length          231.50           AREA OF POOL   =           56.25     3.32
mean width        7.31           AREA OF RUN    =           84.00     4.96
spawn area      443.19           AREA OF GLIDE  =          660.50    39.01
%sp hab          26.17           TOTAL          =         1693.25   100.00
area of riffle              569.50  33.63
area of pool                 56.25   3.32 MEAN MAX POOL DEPTH  =    150.00
area of run                  84.00   4.96 MEAN CHANNEL WIDTH =        9.75
area of glide               176.00  10.39 MEAN RIFFLE DEPTH =        31.67
area of r-p                   0.00   0.00 MEAN  D-90        =        33.57
area of r-rn                  0.00   0.00
area of r-g                   0.00   0.00
area of p-r                   0.00   0.00
area of p-rn                  0.00   0.00
area of p-g                   0.00   0.00
area of rn-r                  0.00   0.00
area of rn-p                  0.00   0.00
area of rn-g                  0.00   0.00
area of g-r                 897.50  47.69
area of g-p                   0.00   0.00
area of g-rn                  0.00   0.00
                 TOTAL =   1693.25    100
```

SYSTEM NAME LAFFERTY CREEK SURVEY UTM 10.4233.62471 MAP# 94 C/8
REACH 3 WATER 11.0 C. DATE 890822 REACH LENGTH 4.7 km.
TURBID 100 CREW BB/AM LENGTH SURVEYED 134 m.

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RIFFLE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADULT	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
G	14	8.1	9	0	40	55	20	5	19	0.26	10	25	0	5	20	FLOW MEAN DEPTH 45 CM
P	[illegible]	9	10	0	40	80	20	4	20	0.20	10	20	1	1	20	9.5 SEC OVER 11 M
G/R	25	8	9	1	60	75	40				10	20	1	0	10	MEAN WETTED WIDTH 6.0 M
G	11	8.5	9.5	0	450	60	25				0	5	0	0	10	
P	15	6	7	0	60	75	20				5	5	1	1	8	
RN-G	21	6.5	7	0	60	80	28				0	18	0	0	15	
RN	12	7.5	8.5	0	60	80	30				15	30	15	0	10	
G	15	5.5	6.5	0	45	65	30	4.5	13	0.35	15	30	10	0	5	

							SQ. M.	%
surface area	1003.40			AREA OF RIFFLE =			80.00	7.97
length	134.00			AREA OF POOL =			258.00	25.71
mean width	7.49			AREA OF RUN =			171.90	17.13
spawn area	2.00			AREA OF GLIDE =			493.50	49.18
% sp. hab	0.20			TOTAL =			1003.40	100.00
area of riffle		0.00	0.00					
area of pool		258.00	25.71	MEAN MAX POOL DEPTH =				77.50
area of run		90.00	8.97	MEAN CHANNEL WIDTH =				8.31
area of glide		318.90	31.78	MEAN RIFFLE DEPTH =				
area of r-p		0.00	0.00	MEAN D-90 =				26.63
area of r-rn		0.00	0.00					
area of r-g		0.00	0.00					
area of p-r		0.00	0.00					
area of p-rn		0.00	0.00					
area of p-g		0.00	0.00					
area of rn-r		0.00	0.00					
area of rn-p		0.00	0.00					
area of rn-g		136.50	13.60					
area of g-r		200.00	19.93					
area of g-p		0.00	0.00					
area of g-rn		0.00	0.00					
	TOTAL =	1003.4	100					

SYSTEM NAME LAFFERTY CREEK SURVEY UTM 10.4250.62460 MAP# 94 C/8
REACH # WATER 11.0 C. DATE 890822 REACH LENGTH 3.5 km.
TURBID 100 CREW BB/AM LENGTH SURVEYED 127.5 m.

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	INSTREAM COVER PARR	INSTREAM COVER ADUL	OVERSTREAM COVER CROWN	OVERSTREAM COVER OVERHANG	COMMENTS
R	11	5.1	6	1	38	62	12	6	9.5	0.63	5	10	0	10	10	
P	28	8	9	0	100	150	1				0	50	50	1	1	
G	18	7.5	8	0	70	85	1	5	18	0.28	10	25	1	10	15	
R	9.5	7.5	8	0	70	90	1	6	9	0.67	15	20	1	1	10	
G	20	13	11.5	0	40	75	1				7	12	0	5	35	
G	21	17	20	0	45	85	1				10	20	10	0	20	
G	20	17	20	0	60	90	1				5	10	1	1	15	

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                                                          sq. m.      %
surface  area  1443.35           AREA OF RIFFLE =       127.35      8.82
length          127.50           AREA OF POOL  =        224.00     15.52
mean width       11.32           AREA OF RUN   =          0.00      0.00
spawn area        0.56           AREA OF GLIDE =       1092.00     75.66
%sp hab           0.04           TOTAL         =       1443.35    100.00
area of riffle          127.35  8.82
area of pool            224.00 15.52 MEAN MAX POOL DEPTH  =      150.00
area of run               0.00  0.00 MEAN CHANNEL WIDTH =         12.07
area of glide          1092.00 75.66 MEAN RIFFLE DEPTH =          54.00
area of r-p               0.00  0.00 MEAN  D-90         =         12.00
area of r-rn              0.00  0.00
area of r-g               0.00  0.00
area of p-r               0.00  0.00
area of p-rn              0.00  0.00
area of p-g               0.00  0.00
area of rn-r              0.00  0.00
area of rn-p              0.00  0.00
area of rn-g              0.00  0.00
area of g-r               0.00  0.00
area of g-p               0.00  0.00
area of g-rn              0.00  0.00
                TOTAL =  1443.35  100
```

SYSTEM NAME MACOUN CREEK SURVEY UTM 10.4927.61852 MAP# 93 0/14
REACH 1 WATER DATE 890928 REACH LENGTH 22 km.
TURBID 100+ CREW BB LENGTH SURVEYED 177 m.

HABITAT TYPE	LENGTH (M)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER			OVERSTREAM COVER		COMMENTS
											FRY	PARR	ADUL	CROWN	OVERHANG	
R	16	3	21	0	20	30	25			2.00	5	40	0	30	10	JUNC W/ CLWR
P	11	4	16	0	40	100	40			0.20	30	70	30	30	10	DEB JAM
R	17	5	14	0	30	40	40			2.00	25	60	10	30	10	
G	22	8	14	20	30	60	40			0.60	20	60	10	30	20	UCUT &OHANG SP SUB LG
R	18	3	14	0	20	40	30			1.00	30	40	1	70	10	PHOTO 20
P	7	3	14	10	30	60	20			0.30	20	60	10	40	10	SP SUB LG
R+G	70	7	10	30	20	30	30			1.00	10	80	0	40	10	SP SUB LG PHOTO 21
G+P	16	7	10	10	30	80	25			0.20	30	40	20	10	10	SP SUB LG ENDS AT BDG

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                                                       sq. m.      %
surface  area  1030.00           AREA OF RIFFLE =     481.00    46.70
length          177.00           AREA OF POOL   =     109.80    10.66
mean width        5.82           AREA OF RUN    =       0.00     0.00
spawn area      195.50           AREA OF GLIDE  =     439.20    42.64
%sp hab          18.98           TOTAL          =    1030.00   100.00
area of riffle            187.00 18.16
area of pool               65.00  6.31 MEAN MAX POOL DEPTH  =      80.00
area of run                 0.00  0.00 MEAN CHANNEL WIDTH =        14.13
area of glide             176.00 17.09 MEAN RIFFLE DEPTH =         23.33
area of r-p                 0.00  0.00 MEAN  D-90        =         31.25
area of r-rn                0.00  0.00
area of r-g               490.00 47.57
area of p-r                 0.00  0.00
area of p-rn                0.00  0.00
area of p-g                 0.00  0.00
area of rn-r                0.00  0.00
area of rn-p                0.00  0.00
area of rn-g                0.00  0.00
area of g-r                 0.00  0.00
area of g-p               112.00 10.87
area of g-rn                0.00  0.00
                 TOTAL =    1030   100
```

SYSTEM NAME MANSON RIVER SURVEY UTM 10.4442.61717 MAP# 93 O/12
WATER TEMP. (C) 16 DATE AUG 9, 1989 REACH LENGTH 9.5 km.
REACH 1 CREW O.F./ D.J./ P.R. LENGTH SURVEYED 496 m.
LOCATION STARTS AT FOREST REC SITE AND MOVES UPSTREAM

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D 90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
R	32	30	35	15	35	75	30	15	32	0.47	15	5	0	0	0	MODERATE COMPACTION OF GRAVEL
G	140	23	25	15	50	95	25	10	64	0.16	3	15	2	15	10	LOD PRESENT ON BOTH BANKS
R	15	13.5		20	12	25	18	8	15	0.53	30	0	0	0	0	
R-RN	60	22	31	5	45	95	30			1.00	2	15	5	5	2	BRAIDED CHANNEL
G	55	14	30	45	60	150	15	24	55	0.44	0	20	10	1	10	GRAVEL SUBSTRATE
R	14	3	18	80	8	10	8	15	14	1.07	80	0	0	15	1	SIDE CHANNEL
P	180	10	18	0	40	150	10	0	180	0.00	0	10	0	20	15	SIDE CHANNEL

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                                                        sq. m.      %
surface   area  8314.50             AREA OF RIFFLE =    1996.50   24.01
length           302.00             AREA OF POOL   =    1800.00   21.65
mean width        27.53             AREA OF RUN    =     528.00    6.35
spawn area      1113.60             AREA OF GLIDE  =    3990.00   47.99
%sp hab           13.39             TOTAL          =    8314.50  100.00
area of riffle              1204.50 14.49
area of pool                1800.00 21.65 MEAN MAX POOL DEPTH  =   150.00
area of run                    0.00  0.00 MEAN CHANNEL WIDTH =      39.25
area of glide               3990.00 47.99 MEAN RIFFLE DEPTH =       18.33
area of r-p                    0.00  0.00 MEAN D-90 =               19.43
area of r-rn                1320.00 15.88
area of r-g                    0.00  0.00
area of p-r                    0.00  0.00
area of p-rn                   0.00  0.00
area of p-g                    0.00  0.00
area of rn-r                   0.00  0.00
area of rn-p                   0.00  0.00
area of rn-g                   0.00  0.00
area of g-r                    0.00  0.00
area of g-p                    0.00  0.00
area of g-rn                   0.00  0.00
area of [illegible]            0.00  0.00
                 TOTAL =    8314.50   100
```

SYSTEM NAME MANSON RIVER SURVEY UTM 10.4365.61675 MAP# 93 N/9
REACH 3 WATER 14.5 C. DATE 890808 REACH LENGTH 17 km.
CREW LENGTH SURVEYED 398 m.

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
G-R	140	33	38	1	65	110	55	10.5	140	0.08	10	13	0	15	10	LOD & UCUT BANKS GOOD COVER
R	70	20	25	10	55	90	35	3.5	32	0.11	5	18	0	15	1	GOOD ADULT HOLDING
P	56	24.5	31	1	90	175	30	5.5	56	0.10	0	1	20	10	0	
R	30	17	20	1	50	80	50	18	30	0.60	0	1	0	1	0	
R-G	57	31	36	0	70	95	50	4.5	3	1.50	1	10	10	5	1	
RN	45	19	22	0	100	175	40	4.5	45	0.10	1	1	20	1	10	BEDROCK BERM ACROSS BUT PASSIBLE

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                                                              sq. m.      %
surface  area   10524               AREA OF RIFFLE =        4818.20    45.78
length          398.00              AREA OF POOL   =        1372.00    13.04
mean width       26.44              AREA OF RUN    =         855.00     8.12
spawn area      205.02              AREA OF GLIDE  =        3478.80    33.06
%sp hab           1.95              TOTAL          =       10524.00   100.00
area of riffle            1910.00  18.15
area of pool              1372.00  13.04 MEAN MAX POOL DEPTH  =    175.00
area of run                855.00   8.12 MEAN CHANNEL WIDTH =       28.67
area of glide                0.00   0.00 MEAN RIFFLE DEPTH =        52.50
area of r-p                  0.00   0.00 MEAN  D-90        =        43.33
area of r-rn                 0.00   0.00
area of r-g               1767.00  16.79
area of p-r                  0.00   0.00
area of p-rn                 0.00   0.00
area of p-g                  0.00   0.00
area of rn-r                 0.00   0.00
area of rn-p                 0.00   0.00
area of rn-g                 0.00   0.00
area of g-r               4620.00  43.90
area of g-p                  0.00   0.00
area of g-rn                 0.00   0.00
                 TOTAL =  10524     100
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SYSTEM NAME MANSON SURVEY UTM 10.4323.61561 MAP# 93 N/9
REACH 4 WATER 13.5 C. DATE 890807 REACH LENGTH 9.8 km.
CREW LENGTH SURVEYED 374 m.

AT MUNRO BRIDGE CROSSING

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
G-RN	105	20	45	25	60	90	25	41.5	105	0.40	0	15	10	0	0	SP GRAVEL FOR LARGE FISH
R	39	22	37	20	40	110	20	41.5	39	1.06	10	10	10	0	5	
G	75	22	27	0	70	150	10	16.5	75	0.22	0	10	40	0	5	TRIB ON RT AND UCUT BANK
RN-G	95	15	50	5	60	100	25	101.5	95	1.07	10	10	30	0	0	
P	60	30	45	0	100	300	20	5.5	60	0.09	10	0	60	10	5	BEDROCK ON LEFT BANK

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                                                          sq. m.      %
surface area      7833          AREA OF RIFFLE =          858.00   10.95
length          374.00          AREA OF POOL   =         1800.00   22.98
mean width       20.94          AREA OF RUN    =         1695.00   21.64
spawn area      767.85          AREA OF GLIDE  =         3480.00   44.43
%sp hab           9.80          TOTAL          =         7833.00  100.00
area of riffle          858.00  10.95
area of pool           1800.00  22.98 MEAN MAX POOL DEPTH  =     300.00
area of run               0.00   0.00 MEAN CHANNEL WIDTH =        40.80
area of glide          1650.00  21.06 MEAN RIFFLE DEPTH  =        40.00
area of r-p               0.00   0.00 MEAN  D-90         =        20.00
area of r-rn              0.00   0.00
area of r-g               0.00   0.00
area of p-r               0.00   0.00
area of p-rn              0.00   0.00
area of p-g               0.00   0.00
area of rn-r              0.00   0.00
area of rn-p              0.00   0.00
area of rn-g           1425.00  18.19
area of g-r               0.00   0.00
area of g-p               0.00   0.00
area of g-rn           2100.00  26.81
                TOTAL =   7833    100
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SYSTEM NAME MANSON RIVER SURVEY UTM 10.4270.61553 MAP# 93 N/9
REACH 5 WATER 15.5 C. DATE 890808 REACH LENGTH 6.1 km.
CREW LENGTH SURVEYED 390 m.

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.	RUN (m.)	% SLOPE	INSTREAM COVER FRY	INSTREAM COVER PARR	INSTREAM COVER ADUL	OVERSTREAM COVER CROWN	OVERSTREAM COVER OVERHANG	COMMENTS
R-RN	42	17.5	27.5	0	40	80	30	18	42	0.43	10	10	5	5	5	START AT BDGE GO UPSTREAM
G-R	100	13	37	0	55	95	35	17	100	0.17	10	10	5	30	3	
G	82	24	25	0	70	105	40	19	82	0.23	5	10	10	40	10	BANK FAILING
R	56	22	30	0	50	85	40	29	56	0.52	5	10	0	10	0	
G	110	21	43	5	45	80	30	13	110	0.12	1	10	0	20	2	

		sq. m.	%
AREA OF RIFFLE =		2067.00	28.18
AREA OF POOL =		0.00	0.00
AREA OF RUN =		210.00	2.86
AREA OF GLIDE =		5058.00	68.96
TOTAL =		7335.00	100.00

surface area	7335.00		
length	390.00		
mean width	18.81		
spawn area	115.50		
%sp hab	1.57		
area of riffle		1232.00	16.80
area of pool		0.00	0.00
area of run		0.00	0.00
area of glide		4278.00	58.32
area of r-p		0.00	0.00
area of r-rn		525.00	7.16
area of r-g		0.00	0.00
area of p-r		0.00	0.00
area of p-rn		0.00	0.00
area of p-g		0.00	0.00
area of rn-r		0.00	0.00
area of rn-p		0.00	0.00
area of rn-g		0.00	0.00
area of g-r		1300.00	17.72
area of g-p		0.00	0.00
area of g-rn		0.00	0.00
	TOTAL =	7335.00	100

MEAN MAX POOL DEPTH =
MEAN CHANNEL WIDTH = 32.50
MEAN RIFFLE DEPTH = 50.00
MEAN D-90 = 35.00

SYSTEM NAME MANSON RIVER SURVEY UTM 10.4229.61568 MAP# 93 N/9
REACH 6 WATER 15.5 C. DATE 890809 REACH LENGTH 3.5 km.
CREW AM/NL LENGTH SURVEYED 143 m.

HABITAT TYPE	LENGTH (m)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm)	RIFFLE (cm)	RUN (m)	% SLOPE	INSTREAM COVER			OVERSTREAM COVER		COMMENTS
											FRY	PARR	ADUL	CROWN	OVERHANG	
G	29	17	24.5	5	55	65	33	3.5	29	0.12	10	2	15	20	2	SPAWNING FOR LARGER FISH
R	20	17	19	0	30	40	38	4.5	20	0.23	5	10	15	25	10	SIDE POOL-RUN 10x5M
G	47	11	13	0	50	90	38	3.5	29	0.12	5	10	15	40	15	SIDE CHANNEL .6 m DEEP 15 m Wx50 m
R-G	47	7.1	7.5	20	50	70	35	9	26	0.35	5	15	10	20	10	PARR HABITAT IN SIDE CHANNEL LOO OH

		sq. m.	%
surface area	1683.70		
length	76.00		
mean wet width	22.15		
spawn area	91.39		
Top hab	5.43		
AREA OF RIFFLE =		540.22	32.09
AREA OF POOL =		0	0.00
AREA OF RUN =		0	0.00
AREA OF GLIDE =		1143.48	67.91
TOTAL =		1683.7	100.00

area of riffle	340.00	20.19
area of pool	0.00	0.00
area of run	0.00	0.00
area of glide	1010.00	59.99
area of r-p	0.00	0.00
area of r-rn	0.00	0.00
area of r-g	333.70	19.82
area of p-r	0.00	0.00
area of p-rn	0.00	0.00
area of p-g	0.00	0.00
area of rn-r	0.00	0.00
area of rn-p	0.00	0.00
area of rn-g	0.00	0.00
area of g-r	0.00	0.00
area of g-p	0.00	0.00
area of g-rn	0.00	0.00
TOTAL =	1683.7	100

MEAN MAX POOL DEPTH =
MEAN CHANNEL WIDTH = 16.00
MEAN RIFFLE DEPTH = 30.00
MEAN D-90 = 36.00

SYSTEM NAME MESILINKA SURVEY UTM 10.3964.62371 MAP# 94 C/7
WATER TEMP 8.0 C DATE SEPT 20, 1990 REACH LENGTH 61.7 km.
REACH 1 (upper half) CREW BB AM DJ JD LENGTH SURVEYED 1,428 m.
LOCATION MILE 13-DOWNSTREAM

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE (cm)	RUN (m)	% SLOPE	INSTREAM COVER FRY	INSTREAM COVER PARR	INSTREAM COVER ADUL	OVERSTREAM COVER CROWN	OVERSTREAM COVER OVERHANG	COMMENTS
G	400	25	35	5	40	120	25			0.60	10	80	40	5	0	
R	90	25	60	0	40	100	25			1.00	10	80	40	0	0	
P	120	30	60	20	200	400	20			0.20	10	30	60	0	0	
G	80	40	100	5	30	40	20			0.50	30	30	5			
R	10	80	100	0	20		30			3.00	0	0	0	10	0	
G	200	30	100	0	40	100	20			0.50	10	40	20	10	0	
R	8	5	60	10	30	40	10			1.20	10	30	0	0	0	
RN	100	40	60	5	100	200	30			0.50	10	30	50	0	0	
R	20	40	70	20	30	40	20			1.00	0	20	0			
P	100	30	70	30	200	400	20			0.20	5	10	70	0	0	EX. GRAVEL
G	300	60	60	40	50	70	15			0.40	10	20	5			

surface area	51690
length	1428.00
mean width	36.20
spawn area	9844.00
%sp hab	19.04

area of riffle	3890.00	7.53
area of pool	6600.00	12.77
area of run	4000.00	7.74
area of glide	37200.00	71.97
area of r-p	0.00	0.00
area of r-rn	0.00	0.00
area of r-g	0.00	0.00
area of p-r	0.00	0.00
area of p-rn	0.00	0.00
area of p-g	0.00	0.00
area of rn-r	0.00	0.00
area of rn-p	0.00	0.00
area of rn-g	0.00	0.00
area of g-r	0.00	0.00
area of g-p	0.00	0.00
area of g-rn	0.00	0.00
TOTAL =	51690.00	100

	sq. m.	%
AREA OF RIFFLE =	3890.00	7.53
AREA OF POOL =	6600.00	12.77
AREA OF RUN =	4000.00	7.74
AREA OF GLIDE =	37200.00	71.97
TOTAL =	51690.00	100.00

MEAN MAX POOL DEPTH = 400.00
MEAN CHANNEL WIDTH = 70.45
MEAN RIFFLE DEPTH = 30.00
MEAN D-90 = 21.36

SYSTEM NAME MESILINKA SURVEY UTM 10.3964.62371 MAP# 94 C/7
WATER TEMP (C) 8 DATE SEPT 20, 1990 REACH LENGTH ci 7 m.
REACH 1 (lower half) CREW BB AM DJ JD LENGTH SURVEYED 1,700 m.
LOCATION MILE 13-DOWNSTREAM

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE (cm)	RUN (m)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
R-G	50	40	70	5	100	150	30			0.90	10	40	20			
RN	120	40	70	0	150	100	30			0.50	10	60	30			
R	70	40	90	0	30	50	25			1.00	10	10	0			
P	140	25	70	0	200	600	30			0.20	10	40	70			
G	200	36	65	30	70	120	25			0.40	10	70	30			SIDE CH EXITS RT BK
R	200	45	80	0	40	60	35			1.20	10	30	10			SIDE CH ENTER LF BK
P	150	30	80		200	400	10			0.20	10	30	40			CUTBANKS
G	300	50	100	90	40	600	10			0.50	10	30	10			
P	80	55	70	30	200	40	30			0.20	10	30	70			
G	300	40	50	80	50	100	15			0.60	10	60	20			
	90	45	80	50	250	700										

					sq. m.	%
surface area	68850			AREA OF RIFFLE =	13000.00	18.88
length	1700.00			AREA OF POOL =	16050.00	23.31
mean wet width	40.50			AREA OF RUN =	4800.00	6.97
spawn area	27775			AREA OF GLIDE =	35000.00	50.84
%sp hab	40.34			TOTAL =	68850.00	100.00
area of riffle		11800.00	17.14			
area of pool		16050.00	23.31	MEAN MAX POOL DEPTH =		435.00
area of run		4800.00	6.97	MEAN CHANNEL WIDTH =		89.44
area of glide		34700.00	49.67	MEAN RIFFLE DEPTH =		55.00
area of r-p		0.00	0.00	MEAN D-90 =		24.00
area of r-rn		0.00	0.00			
area of r-g		2000.00	2.90			
area of p-r		0.00	0.00			
area of p-rn		0.00	0.00			
area of p-g		0.00	0.00			
area of rn-r		0.00	0.00			
area of rn-p		0.00	0.00			
area of rn-g		0.00	0.00			
area of g-r		0.00	0.00			
area of g-p		0.00	0.00			
area of g-rn		0.00	0.00			
	TOTAL =	68850	100			

SYSTEM NAME MISINCHINKA SURVEY UTM 10.5234.61304 MAP# 93 O/7
WATER TEMP. (C) 12.5 DATE AUG 27, 1990 REACH LENGTH 11.1 km.
REACH 4 SITE 1 CREW AM DJ JD LENGTH SURVEYED 228 m.
LOCATION FIRST STREAM XING OFF DIRT RD NEAR BIJOUX FALLS-UPSTREAM

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER			OVERSTREAM COVER		COMMENTS
											FRY	PARR	ADUL	CROWN	OVERHANG	
R	17	12.5	130	20	20	25	15	11	17	0.65	15	10	0	0	0	,(SIDE CHANNEL)
P	20	12.5	130	0	55	80	18	0	20	0.00	10	12	1	0	0	,(SIDE CHANNEL)
DEBJAM	19.5	15	130	0	65	90	16	0	19.5	0.00	0	25	10	0	0	,(SIDE CHANNEL)
RN	30	7.5	130	15	35	65	20	3	30	0.10	5	10	1	5	2	,(SIDE CHANNEL)
R	10	9	130	1	22	28	25	12	10	1.20	20	15	1	0	0	,(SIDE CHANNEL)
R	9	12.5	130	5	28	35	28	3	9	0.33	1	7	0	0	0	
G	35	15	110	1	45	90	22	1	35	0.03	5	10	7	10	5	
RN	10	14.5	110	10	50	100	15	1	10	0.10	0	10	15	15	5	
R	65	10	110	15	35	60	30	2	40	0.05	8	20	0	0	0	
G	12.5	20	100	5	55	80	25	3	12.5	0.24	10	35	5	0	0	

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                                                               sq. m.      %
surface  area  2752.5              AREA OF RIFFLE =           1065.00    43.29
length         131.50              AREA OF POOL   =            250.00    10.16
mean wet width  20.93              AREA OF RUN    =            370.00    15.04
spawn area     212.53              AREA OF GLIDE  =            775.00    31.50
%sp hab          7.72              TOTAL          =           2460.00   100.00
area of riffle            1065.00  38.69
area of pool               250.00  9.08  MEAN MAX POOL DEPTH  =          80.00
area of run                370.00  13.44 MEAN CHANNEL WIDTH =          242.00
area of glide              775.00  28.16 MEAN RIFFLE DEPTH =            26.25
area of r-p                  0.00  0.00  MEAN D-90 =                    21.40
area of r-rn                 0.00  0.00
area of r-g                  0.00  0.00
area of p-r                  0.00  0.00
area of p-rn                 0.00  0.00
area of p-g                  0.00  0.00
area of rn-r                 0.00  0.00
area of rn-p                 0.00  0.00
area of rn-g                 0.00  0.00
area of g-r                  0.00  0.00
area of g-p                  0.00  0.00
area of g-rn                 0.00  0.00
area of debjam             292.50  10.63
                 TOTAL =   2752.5  100
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SYSTEM NAME MISINCHINKA SURVEY UTM 10.5246.61326 MAP# 93 0/7
WATER TEMP 10 DATE AUG 29, 1990 REACH LENGTH 11.1 km.
REACH 4 CREW DJ AM JD LENGTH SURVEYED 501 m.
LOCATID UPPER MOST ACCESSABLE PT ON R 4-UPSTRM (RD MAKES HAIRPIN TURN HERE)

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER			OVERSTREAM COVER		COMMENTS
											FRY	PARR	ADUL	CROWN	OVERHANG	
R	21	11.5	29	0	20	30	40	27	21	1.29	5	25	0	5		STRM BRAIDED, RL:6 PHOTO 17
R-G	100	13	28	0	30	40	30	5	100	0.05	10	20		10		INCLUDES EF S2 R4
R	90	9	28	0	22	35	25	12	90	0.13	8	15		5		STILL BRAIDED
R-G	100	27	27	1	35	50	30	6	100	0.06	7	7	0	35	3	STILL BRAIDED
RN	18	21	32	0	60	90	40	1	18	0.06	0	0	30	35		
R	60	25	35	0	35	55	38	11	60	0.18	2	2		40	1	RL:6 PHOTO 21
G	45	16	36	0	40	60	38	1	45	0.02	0	2	5	40	1	
RN	35	11.5	28	0	100	200	100	0	35	0.00	0	0	45	65	0	RL:6 PHOTO 22
R	10	9	29	0	35	55	50	27	10	2.70	0	0	1	40	0	RL:6 PHOTO 22
G-P	22	25	34	0	45	110	45	1	22	0.05	0	5	20	65	0	

CX: SOME DEEPER RUNS ARE EXCELLENT ADLT HLDING AREAS. ALSO PROVIDE OVERWINTERING HAB.
SP VERY LOW, SUSPECT FRY CAUGHT IN EF R4 S2 ORIGINATED FROM TRIB ENTERING RT BK (ATUNATCHE C)
SOME REARING , COVER LIMITED DUE TO GRAVELS AND SANDS IN SPACES BETWEEN BOULDERS

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                                                             sq. m.      %
surface  area     8692              AREA OF RIFFLE =       5041.50    58.00
length          501.00              AREA OF POOL   =        220.00     2.53
mean width       17.35              AREA OF RUN    =        780.50     8.98
spawn area       27.00              AREA OF GLIDE  =       2650.00    30.49
%sp hab           0.31              TOTAL          =       8692.00   100.00
area of riffle            2641.50  30.39
area of pool                 0.00   0.00  MEAN MAX POOL DEPTH  =
area of run                780.50   8.98  MEAN CHANNEL WIDTH =          30.60
area of glide              720.00   8.28  MEAN RIFFLE DEPTH =           28.00
area of r-p                  0.00   0.00  MEAN D-90 =                   43.60
area of r-rn                 0.00   0.00
area of r-g               4000.00  46.02
area of p-r                  0.00   0.00
area of p-rn                 0.00   0.00
area of p-g                  0.00   0.00
area of rn-r                 0.00   0.00
area of rn-p                 0.00   0.00
area of rn-g                 0.00   0.00
area of g-r                  0.00   0.00
area of g-p                550.00   6.33
area of g-rn                 0.00   0.00
               TOTAL =       8692    100
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SYSTEM NAME MISINCHINKA SURVEY UTM 10.5306.61265 MAP# 93 0/7
WATER TEMP. (C) 9.5 DATE AUG 29, 1990 REACH LENGTH 3.5 km.
REACH 6 CREW AM DJ JD LENGTH SURVEYED 302.5 m.
LOCATION AT HIGHEST ROAD XING (ROAD WASED OUT .5KM PRIOR TO RIVER)-UPSTRM

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER			OVERSTREAM COVER		COMMENTS
											FRY	PARR	ADUL	CROWN	OVERHANG	
R	18	11.5	20	5	25	40	40	22	18	1.22	2	15	5	0	0	
G	12	16	19	5	30	45	32	1	12	0.08	15	20	0	0	0	
R-G	50	16	18	1	30	48	45	7	50	0.14	5	20	0	0	0	
R	27	11	13	0	30	35	60	10	27	0.37	0	20	0	0	0	
G-R	32	6.5	6.5	0	45	90	60	12	32	0.38	3	40	3	0	0	RL:6 PHOTO 11
RN	8.5	5.5	5.5	0	70	95	50	1	8.5	0.12	0	15	5	0	0	
R	10	12	18	0	30	40	40	10	10	1.00	3	20	0	0	0	
R-G	30	12	18	4	25	40	35	10	35	0.29	8	20	0			RL:6 PHOTO13
R	30	11.5	13.5	0	30	35	35	7	30	0.23	0	15	0	10	0	
G	85	22	24	20	35	90	30	1	85	0.01	5	15	1	15	2	RL:6 14

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                                                             sq. m.       %
surface  area  4445.75            AREA OF RIFFLE =          1748.20    39.32
length          302.50            AREA OF POOL   =             0.00     0.00
mean width       14.70            AREA OF RUN    =            46.75     1.05
spawn area      416.35            AREA OF GLIDE  =          2650.80    59.63
%sp hab           9.37            TOTAL          =          4445.75   100.00
area of riffle            969.00  21.80
area of pool                0.00   0.00  MEAN MAX POOL DEPTH  =
area of run                46.75   1.05  MEAN CHANNEL WIDTH =          15.55
area of glide            2062.00  46.38  MEAN RIFFLE DEPTH =           28.75
area of r-p                 0.00   0.00  MEAN D-90 =                   42 70
area of r-rn                0.00   0.00
area of r-g              1160.00  26.09
area of p-r                 0.00   0.00
area of p-rn                0.00   0.00
area of p-g                 0.00   0.00
area of rn-r                0.00   0.00
area of rn-p                0.00   0.00
area of rn-g                0.00   0.00
area of g-r               208.00   4.68
area of g-p                 0.00   0.00
area-of g-rn                0.00   0.00
              TOTAL =    4445.75   100
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SYSTEM NAME MISINCHINKA SURVEY UTM 10.5207.61281 MAP# 93 O/7
WATER TEMP. (C) 12 DATE AUG 29, 1990 REACH LENGTH 11.1 km.
REACH 4 SITE 3 CREW DJ AM JD LENGTH SURVEYED 263 m.
LOCATION AT VISIBLE ACCESS OFF HIGH WAY 97N JUST PRIOR TO BIJOUX FALLS
- this is definately a transition area with substrate consisting of predominately gravel (esp. large)

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
G	80	27	29	20	30	120	0	0	80	0.00	3	3	10	1	2	
P	12	16	41	0	90	110	15	0	12	0.00	0	5	20	5	5	
G	19	12	45	0	70	115	10	0	19	0.00	0	5	10	10	5	RL:7 PHOTO 4
DEBJAM	25	60	90	0	150	200	8	0	25	0.00	0	15	30	5	25	RL:7 PHOTO5,6
R-G	33	13.5	48	8	30	55	10	12	33	0.36	1	1	1	1	1	RL:7 PHOTO 7
R	22	8	40	3	40	70	15	15	22	0.68	0	0	2	0	0	
G	22	7	48	0	70	110	12	0	22	0.00	0	5	10	35	15	RL:7 PHOTO9, (SIDE CHANNEL)
P	15	8	0	0	80	150	12	0	15	0.00	0	10	20	0	1	DEBJAM, POOL UNDERNEATH
G	15	23	50	25	30	50	12	1	15	0.07	5	0	0	2	2	
P	20	15	45	0	100	150	10	0	20	0.00	0	15	15	20	5	

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                                                        sq. m.      %
surface  area  5620.50             AREA OF RIFFLE =     443.30   10.76
length          241.00             AREA OF POOL   =     766.00   18.59
mean wet width   23.32             AREA OF RUN    =       0.00    0.00
spawn area      559.17             AREA OF GLIDE  =    2911.20   70.65
%sp hab           9.95             TOTAL          =    4120.50  100.00
area of riffle            176.00   3.13
area of pool              766.00  13.63 MEAN MAX POOL DEPTH  =    130.00
area of run                 0.00   0.00 MEAN CHANNEL WIDTH =       48.44
area of glide            2733.00  48.63 MEAN RIFFLE DEPTH =        40.00
area of r-p                 0.00   0.00 MEAN D-90 =                11.56
area of r-rn                0.00   0.00
area of r-g               445.50   7.93
area of p-r                 0.00   0.00
area of p-rn                0.00   0.00
area of p-g                 0.00   0.00
area of rn-r                0.00   0.00
area of rn-p                0.00   0.00
area of rn-g                0.00   0.00
area of g-r                 0.00   0.00
area of g-p                 0.00   0.00
area of g-rn                0.00   0.00
area of debjam           1500.00  26.69
              TOTAL =    5620.50   100
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SYSTEM NAME      MUGAHA          SURVEY UTM  10.4886.61386                      MAP# 93 0/6
WATER TEMP.  (C)                 DATE        AUG 1,  1990         REACH LENGTH 7.5 km.
REACH           1  SITE 1        CREW        AM BB JD             LENGTH SURVEYED 154 m.
LOCATIO CONFLUENCE MORFEE AND MUGAHA-UPSTREAM
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HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER			OVERSTREAM COVER		COMMENTS
											FRY	PARR	ADUL	CROWN	OVERHANG	
R	21	5	23	0	25	40	20	19	21	0.90	15	20	1	0	1	
G	28	9	23	10	20	40	15	5	28	0.18	20	5	1	1	1	HIGH % FINES
P	14	6.5	23	0	80	200	20	1	14	0.07	10	25	30	35	15	
R	25	5	23	10	30	45	20	8	25	0.32	10	20	0	60	35	
G	15	7	27	25	30	50	20	2	15	0.13	20	10	0	60	0	
RN	8	5.5	27	5	40	60	20	2	8	0.25	10	30	1	60	0	
P	5	5	27	0	40	70	10	1	5	0.20	10	50	30	60	0	ROOT WAD
debjam	20	20	30	10	30	45	20	2	20	0.10	70	85	80	15	20	
G	18	7	22	15	55	85	20	1	18	0.06	23	15	5	2	8	

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                                                              sq. m.      %
surface  area  1273.00               AREA OF RIFFLE =         230.00    26.35
length          154.00               AREA OF POOL   =         116.00    13.29
mean width        8.27               AREA OF RUN    =          44.00     5.04
spawn area      125.05               AREA OF GLIDE  =         483.00    55.33
%sp hab           9.82               TOTAL          =         873.00   100.00
area of riffle             230.00 18.07
area of pool               116.00  9.11 MEAN MAX POOL DEPTH  =         135.00
area of run                 44.00  3.46 MEAN CHANNEL WIDTH =            25.00
area of glide              483.00 37.94 MEAN RIFFLE DEPTH =             27.50
area of r-p                  0.00  0.00 MEAN D-90 =                     18.33
area of r-rn                 0.00  0.00
area of r-g                  0.00  0.00
area of p-r                  0.00  0.00
area of p-rn                 0.00  0.00
area of p-g                  0.00  0.00
area of rn-r                 0.00  0.00
area of rn-p                 0.00  0.00
area of rn-g                 0.00  0.00
area of g-r                  0.00  0.00
area of g-p                  0.00  0.00
area of g-rn                 0.00  0.00
area of debjam             400.00 31.42
                  total   1273.00   100
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SYSTEM NAME MUGAHA SURVEY UTM 10.4887.61391 MAP# 93 0/6
WATER TEMP. (C) 8 DATE AUG 3, 1990 REACH LENGTH 7.5 km.
REACH 1 SITE 2 CREW BB AM JD LENGTH SURVEYED 396 m.
LOCATIO 'DIRT ROAD WITH CLEARING - 0.8 KM UPSTRM OF CONF MUG & MORFEE

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER			OVERSTREAM COVER		COMMENTS
											FRY	PARR	ADUL	CROWN	OVERHANG	
P	28	10	15	10	50	150	10	1	28	0.04	20	25	25	20	10	
G	13	9	18	70	20	30	20	4	13	0.31	5	5	0	10	0	
P	35	10	25	5	70	200	15	7	35	0.20	20	60	60	10	15	UCUT BANKS,LOGS
R	8	10	30	0	20	30	20	30	8	3.75	5	5	0	10	10	3 CHANNELS
G	28	15	15	5	20	35	15	1	28	0.04	10	10	0	40	10	
P	28	10	25	5	50	100	18	1	28	0.04	15	40	40	20	15	
R	6	20	26	10	7	15	20	17	6	2.83	10	5	0	25	5	
G	25	18	25	40	25	50	20	1	25	0.04	10	10	1	25	10	
DEBJAM	25	20	25	1	60	140	20	1	25	0.04	80	80	70	25	10	,(SIDE CHANNEL)
R-G	17	15	25	15	20	60	28	20	17	1.18	15	10	1	30	5	
P	30	7	20	0	40	120	15	1	30	0.03	15	30	25	20	15	
R	9	11	30	15	10	20	15	3	9	0.33	10	10	0	10	0	
P	43	8	20	10	60	110	10	0	43	0.00	20	40	40	50	10	
R	9	4	30	10	28	30	15	14	9	1.56	10	10	5	40	0	
G	35	15	30	15	25	55	15	1	30	0.03	10	10	0	0	5	
P	33	12	30	5	70	200	15	1	33	0.03	10	25	20	10	5	
R	24	8	30	10	15	30	25	18	24	0.75	5	5	0	10	5	

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surface  area  4654.00           AREA OF RIFFLE =        680.00    16.37
length          371.00           AREA OF POOL   =       1860.00    44.78
mean wet width   12.54           AREA OF RUN    =          0.00     0.00
spawn area      568.25           AREA OF GLIDE  =       1614.00    38.85
%sp hab          12.21           TOTAL          =       4154.00   100.00
area of riffle          527.00  11.32
area of pool           1860.00  39.97 MEAN MAX POOL DEPTH  =   146.67
area of run               0.00   0.00 MEAN CHANNEL WIDTH =     24.00
area of glide          1512.00  32.49 MEAN RIFFLE DEPTH =      16.00
area of r-p               0.00   0.00 MEAN D-90 =              17.41
area of r-rn              0.00   0.00
area of r-g             255.00   5.48
area of p-r               0.00   0.00
area of p-rn              0.00   0.00
area of p-g               0.00   0.00
area of rn-r              0.00   0.00
area of rn-p              0.00   0.00
area of rn-g              0.00   0.00
area of g-r               0.00   0.00
area of g-p               0.00   0.00
area of g-rn              0.00   0.00
area of debjam          500.00  10.74
               TOTAL =  4654.00    100
```

SYSTEM NAME MUGAHA SURVEY UTM 10.49225.614285 MAP# 93 0/6
WATER TEMP. (C) 11 DATE AUG 2, 1990 REACH LENGTH 2.5 km.
REACH 2 CREW BB AM JD LENGTH SURVEYED 356 m.
LOCATION 1KM HIKE N FROM ROAD WASHOUT-UPSTREAM

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
P	18	10	19	10	50	200	25	1	18	0.06	10	25	40	20	10	
R	35	15	15	0	25	40	40	21	35	0.60	20	30	0	25	1	
G	22	16	16	10	15	30	30	1	22	0.05	30	20	0	25	1	
G-R	72	16	16	10	25	40	40	15	72	0.21	30	50	0	25	1	
G	30	12	12	10	30	45	40	2	30	0.07	30	30	0	25	1	
R-G	40	8	10	0	30	50	50	9	40	0.23	20	50	1	25	1	
R	33	15	16	0	25	40	50	38	33	1.15	20	50	0	40	1	
G	80	11	11	10	40	60	60	2	80	0.03	10	30	5	60	1	
R	26	7	9	0	30	50	40	24	26	0.92	15	25	0	60	1	

```
                                                               sq. m.      %
surface  area  4446.00              AREA OF RIFFLE =          1854.80    41.72
length          356.00              AREA OF POOL   =           180.00     4.05
mean width       12.49              AREA OF RUN    =             0.00     0.00
spawn area      292.40              AREA OF GLIDE  =          2411.20    54.23
%sp hab           6.58              TOTAL          =          4446.00   100.00
area of riffle              1202.00 27.04
area of pool                 180.00  4.05 MEAN MAX POOL DEPTH  =        200.00
area of run                    0.00  0.00 MEAN CHANNEL WIDTH =           13.78
area of glide               1592.00 35.81 MEAN RIFFLE DEPTH =            26.67
area of r-p                    0.00  0.00 MEAN D-90 =                    41.67
area of r-rn                   0.00  0.00
area of r-g                  320.00  7.20
area of p-r                    0.00  0.00
area of p-rn                   0.00  0.00
area of p-g                    0.00  0.00
area of rn-r                   0.00  0.00
area of rn-p                   0.00  0.00
area of rn-g                   0.00  0.00
area of g-r                 1152.00 25.91
area of g-p                    0.00  0.00
area of g-rn                   0.00  0.00
                 TOTAL =    4446.00  100
```

SYSTEM NAME NABESCHE SURVEY UTM 10.4890.62205 MAP# 94 B/3
WATER TEMP. (C 10 DATE AUG 13, 1991 REACH LENGTH 3.3 km.
REACH 1 CREW BB/JD LENGTH SURVEYED 586 m.
LOCATIO stream mouth surveying upstream

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	INSTREAM COVER PARR	INSTREAM COVER ADUL	OVERSTREAM COVER CROWN	OVERSTREAM COVER OVERHANG	COMMENTS
R	75	16	22	0	60	100	60	95	75	1.27	10	70	30	20	0	fast bedrock riffle 50m. up from mout
RN-G	19	16	22	0	50	100	70	29	19	1.53	10	70	30	20	0	large bedrock substrate
R	54	18	24	0	60	100	80	60	54	1.11	10	70	30	20	0	large bedrock substrate
G-R	110	20	26	0	60	110	90	33	110	0.30	10	70	40	20	0	large bedrock substrate
R	69	14	20	0	50	70	80	32	69	0.46	10	70	30	20	0	
G	85	16	21	15	50	100	80	18	85	0.21	10	50	30	20	0	riffle in middle 10 m. long
R	54	15	21	0	60	100	100	80	54	1.48	10	60	10	10	0	
P	66	13	21	10	100	200	90	5	66	0.08	5	30	50	10	0	bedrock pool
R	16	14	30	0	40	50	40	35	16	2.19	5	30	10	10	0	
P	38	11	32	10	140	300	40	1	38	0.03	5	30	60	10	0	failing bank gravel and clay

```
                                                        sq .m.      %
surfac  area  9312.00               AREA OF RIFFLE =    5052.00    54.25
length         586.00               AREA OF POOL   =    1276.00    13.70
mean width      15.89               AREA OF RUN    =     182.40     1.96
spawn area     331.60               AREA OF GLIDE  =    2801.60    30.09
%sp hab          3.56               TOTAL          =    9312.00   100.00
area of riffle          4172.00 44.80
area of pool            1276.00 13.70 MEAN MAX POOL DEPTH  =      250.00
area of run                0.00  0.00 MEAN CHANNEL WIDTH =         23.90
area of glide           1360.00 14.60 MEAN RIFFLE DEPTH =          54.00
area of r-p                0.00  0.00 MEAN D-90 =                  73.00
area of r-rn               0.00  0.00
area of r-g                0.00  0.00
area of p-r                0.00  0.00
area of p-rn               0.00  0.00
area of p-g                0.00  0.00
area of rn-r               0.00  0.00
area of rn-p               0.00  0.00
area of rn-g             304.00  3.26
area of g-r             2200.00 23.63
area of g-p                0.00  0.00
area of g-rn               0.00  0.00
            TOTAL       9312.00  100
```

SYSTEM NAME NABESCHE SURVEY UTM 10.4932.62920 MAP# 94 B/3
WATER TEMP. (C) 12.5 DATE AUG 10, 1991 REACH LENGTH 8.3 km.
REACH 2 CREW A.M./A.L. LENGTH SURVEYED 467 m.
LOCATION from 500 m. downstream of falls to the falls

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	SLOPE RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
R	45	22	23	1	40	60	22	23	45	0.51	1	1	0	5	1	
G	40	23	24	1	50	55	20	7	40	0.18	0	1	0	5	1	only very large fish could spawn here
R-RN	40	20	26	0	40	65	20	10	40	0.25	0	1	0	5	1	
RN-R	42	18	19	2	100	150	25	9	42	0.21	1	5	1	5	1	only very large fish could spawn here
P	70	8.5	9	0	250	400	15	1	70	0.01	1	5	80	60	0	
CA	50	10	10	0	120	150	20	56	50	1.12	0	0	0	60	0	
RN	22	8	10	5	100	150	30	2	22	0.09	1	1	1	50	0	
R	23	10	11	0	100	150	80	39	23	1.70	0	1	1	50	0	
RN	30	9	10	0	110	180	70	6	30	0.20	0	2	10	50	0	
RN-R	20	10	11	0	75	150	70	44	20	2.20	0	1	1	50	0	
P	85	26	26	2	200	350	60	1	85	0.01	1	5	50	50	1	falls at end of survey point

```
                                                              sq. m.      %
surface  area  7458.00               AREA OF RIFFLE =        2006.80    28.84
length          467.00               AREA OF POOL   =        2805.00    40.31
mean width       15.97               AREA OF RUN    =        1226.20    17.62
spawn area      337.22               AREA OF GLIDE  =         920.00    13.22
%sp hab           4.52               TOTAL          =        6958.00   100.00
area of riffle           1220.00  16.36
area of pool             2805.00  37.61 MEAN MAX POOL DEPTH  =          375.00
area of run               446.00   5.98 MEAN CHANNEL WIDTH =             16.27
area of glide             920.00  12.34 MEAN RIFFLE DEPTH =              70.00
area of r-p                 0.00   0.00 MEAN D-90 =                      39.27
area of r-rn              800.00  10.73
area of r-g                 0.00   0.00
area of p-r                 0.00   0.00
area of p-rn                0.00   0.00
area of p-g                 0.00   0.00
area of rn-r              767.00  10.28
area of rn-p                0.00   0.00
area of rn-g                0.00   0.00
area of g-r                 0.00   0.00
area of g-p                 0.00   0.00
area of g-rn                0.00   0.00
area of ca                500.00   6.70
               TOTAL =      7458    100
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SYSTEM NAME NABESCHE SURVEY UTM 10.4918.62368 MAP# 94 B/6
WATER TEMP. (C) 10 DATE AUG 8, 1991 REACH LENGTH 9.4 km.
REACH 3 CREW A.M./A.L. LENGTH SURVEYED 747 m.
LOCATION from 520 m. downstream of confluence with Emerslund to cofluence

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
R	70	15	20	0	40	80	30	72	70	1.03	0	2	2	10	0	
R	60	9	9	10	30	60	18	47	60	0.78	2	5	1	5	0	side channel #1
RN	30	13	15	5	60	80	20	8	30	0.27	2	5	2	5	0	
R	60	15	17	5	35	60	18	75	60	1.25	1	1	0	0	1	
R	30	7	12	5	20	30	15	25	30	0.83	1	2	0	5	0	side channel #2 & #3
P	13	7	8	2	80	130	18	1	13	0.08	1	30	20	1	0	side channel #2
P	30	8	16	0	25	40	20	29	30	0.97	1	2	0	10	1	side channel #2
R-G	32	6	15	0	15	25	24	20	32	0.63	10	5	0	15	1	side channel #3
R	60	15	17	0	15	25	28	19	60	0.32	30	5	0	15	1	side channel #3
P	32	9	11	0	40	60	20	1	32	0.03	15	5	0	15	5	side channel #3
R-G	30	8	9	0	25	35	25	13	30	0.43	10	5	0	15	10	side channel #3
RN	100	17	19	1	100	150	25	17	100	0.17	4	15	20	10	1	
R	65	13	15	1	30	40	23	39	65	0.60	1	1	0	10	1	
RN	90	14	16	3	70	100	20	2	90	0.02	0	3	1	5	1	
R	45	15	18	0	40	55	25	77	45	1.71	0	1	0	5	0	

surface area	9521.00			AREA OF RIFFLE =	5619.20	59.02
length	460.00			AREA OF POOL =	379.00	3.98
mean width	20.70			AREA OF RUN =	3350.00	35.19
spawn area	194.07			AREA OF GLIDE =	172.80	1.81
%sp hab	2.04			TOTAL =	9521.00	100.00
area of riffle		5360.00	56.30			
area of pool		379.00	3.98	MEAN MAX POOL DEPTH =		95.00
area of run		3350.00	35.19	MEAN CHANNEL WIDTH =		31.00
area of glide		0.00	0.00	MEAN RIFFLE DEPTH =		29.38
area of r-p		0.00	0.00	MEAN D-90 =		21.93
area of r-rn		0.00	0.00			
area of r-g		432.00	4.54			
area of p-r		0.00	0.00			
area of p-rn		0.00	0.00			
area of p-g		0.00	0.00			
area of rn-r		0.00	0.00			
area of rn-p		0.00	0.00			
area of rn-g		0.00	0.00			
area of g-r		0.00	0.00			
area of g-p		0.00	0.00			
area of g-rn		0.00	0.00			
	TOTAL	9521.00	100			

SYSTEM NAME NABESCHE SURVEY UTM 10.4910.62370 MAP# 94 B/6
WATER TEMP. (C) 8.5 DATE AUG 9, 1991 REACH LENGTH 1.7 km.
REACH 4 CREW A.L./A.M. LENGTH SURVEYED 338 m.

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.	RUN (m.)	% SLOPE	INSTREAM COVER			OVERSTREAM COVER		COMMENTS
											FRY	PARR	ADUL	CROWN	OVERHANG	
R	28	15	16	1	40	75	41	38	28	1.36	0	2	1	1	1	
RN	20	21	21	0	40	70	36	3	20	0.15	1	5	1	1	1	
RN-P	32	20	20	30	100	200	20	1	32	0.03	5	10	10	5	1	
CA	23	17	18	0	70	100	50	82.5	23	3.59	0	1	0	5	2	
RN	33	14	16	1	90	140	41	23.5	33	0.71	1	1	0	3	1	
R	65	13	15	1	70	120	90	44	65	0.68	0	1	1	2	0	
RN	32	13	15	1	100	160	80	3	32	0.09	0	1	10	1	0	
CA	45	9	10	1	100	150	80	138	45	3.07	0	0	0	1	2	
RN	28	20	21	10	60	100	60	6	28	0.21	1	2	1	2	1	
P	32	17	18	5	200	400	80	1	32	0.03	7	50	25	2	1	

```
                                                            sq. m.       %
surface  area  5103.00            AREA OF RIFFLE =         1265.00     29.37
length          338.00            AREA OF POOL   =          800.00     18.57
mean width       15.10            AREA OF RUN    =         2242.00     52.05
spawn area      300.68            AREA OF GLIDE  =            0.00      0.00
%in hab           5.89            TOTAL          =         4307.00    100.00
area of riffle           1265.00  24.79
area of pool              544.00  10.66 MEAN MAX POOL DEPTH  =        400.00
area of run              1858.00  36.41 MEAN CHANNEL WIDTH =           17.00
area of glide               0.00   0.00 MEAN RIFFLE DEPTH =            55.00
area of r-p                 0.00   0.00 MEAN D-90 =                    57.00
area of r-rn                0.00   0.00
area of r-g                 0.00   0.00
area of p-r                 0.00   0.00
area of p-rn                0.00   0.00
area of p-g                 0.00   0.00
area of rn-r                0.00   0.00
area of rn-p              640.00  12.54
area of rn-g                0.00   0.00
area of g-r                 0.00   0.00
area of g-p                 0.00   0.00
area of g-rn                0.00   0.00
area of ca                796.00  15.60
                TOTAL =  5103.00   100
```

SYSTEM NAME NABESCHE SURVEY UTM 10.4848.62382 MAP# 94 B/6
WATER TEMP. (C) 10 DATE AUG 9, 1991 REACH LENGTH 11.5 km.
REACH 5 CREW A.L./J.D. LENGTH SURVEYED 488 m.

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
R	28	25	26	0	25	35	8	4.5	28	0.16	1	0	0	0	1	
G	56	23	25	30	35	80	10	1	56	0.02	1	1	0	1	1	spawning for large fish only
R	18	23	25	0	20	30	12	1	18	0.06	0	0	0	1	1	
P-RN	42	13	20	10	100	250	15	1	42	0.02	0	5	20	5	0	spawning for large fish only
RN	35	14	31	0	120	200	10	5	35	0.14	0	2	5	10	0	
RN-P	40	26	12	5	120	150	10	1	40	0.03	5	5	10	0	1	
R	15	10.5	50	0	40	60	8	20	15	1.33	0	0	0	0	5	braiding of stream channel
G	66	10	70	5	60	90	7	1	66	0.02	0	1	0	0	0	spawning for large fish only
RN	29	6	50	0	45	100	7	8	29	0.28	0	0	0	0	0	
P	28	9.5	30	1	130	200	6	1	28	0.04	10	20	10	0	2	
R	24	12	50	0	10	15	10	21	24	0.88	0	0	0	0	0	side channel #1
R	43	4.5	70	5	15	30	6	16	43	0.37	0	0	0	0	0	side channel #2
P	16	5	70	5	35	50	5	1	16	0.06	50	50	1	0	40	side channel #2
RN	15	5	30	0	40	80	5	25	15	1.67	10	10	0	1	10	side channel #2
R	33	6	6	2	20	30	5	16	33	0.48	0	0	0	0	0	side channel #3

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surface area  6570.00              AREA OF RIFFLE =      1951.00   29.70
length         357.00              AREA OF POOL   =      1089.60   16.58
mean wet width  18.40              AREA OF RUN    =      1581.40   24.07
spawn area     546.30              AREA OF GLIDE  =      1948.00   29.65
%sp hab          8.31              TOTAL          =      6570.00  100.00
area of riffle          1951.00 29.70
area of pool             346.00  5.27 MEAN MAX POOL DEPTH  =   125.00
area of run              739.00 11.25 MEAN CHANNEL WIDTH =      56.50
area of glide           1948.00 29.65 MEAN RIFFLE DEPTH =       21.67
area of r-p                0.00  0.00 MEAN D-90 =                8.27
area of r-rn               0.00  0.00
area of r-g                0.00  0.00
area of p-r                0.00  0.00
area of p-rn             546.00  8.31
area of p-g                0.00  0.00
area of rn-r               0.00  0.00
area of rn-p            1040.00 15.83
area of rn-g               0.00  0.00
area of g-r                0.00  0.00
area of g-p                0.00  0.00
area of g-rn               0.00  0.00
             TOTAL =    6570.00  100
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SYSTEM NAME NABESCHE SURVEY UTM 10.4782.62445 MAP# 94 B/6
WATER TEMP. (C) 8.5 DATE AUG 11, 1991 REACH LENGTH N/A
REACH N/A CREW A.L./B.B. LENGTH SURVEYED 259 m.
LOCATION At 45 km. point on road...beyond end of survey and previously identified reaches. (Above reach 5)

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE (cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
R	22	18	18	2	30	40	25	14	22	0.64	15	10	0	60	0	
G	30	18	18	10	40	55	20	4	30	0.13	15	20	5	60	0	blow down of leave strip on right bank
R-G	14	18	18	0	20	30	30	4	14	0.29	10	15	0	60	0	under cut bank
G	30	15	15	20	30	35	16	7	30	0.23	5	15	0	50	0	under cut bank
R-G	33	13	13	15	25	35	20	5	33	0.15	10	20	0	50	1	under cut bank
P-G	27	10	10	5	70	90	25	2	27	0.07	5	50	40	40	1	under cut bank
R	56	20	26	5	15	30	15	43	56	0.77	10	10	0	30	0	mid channel bar (2 m.)
P	16	4	40	0	10	130	15	1	18	0.06	10	80	70	20	1	side pool, unstable woody debris in strea
G	14	13	40	5	30	45	17	2	14	0.14	10	10	0	20	1	
P	17	10	40	5	70	110	17	1	17	0.06	10	40	30	15	1	woody debris in stream

surface area 3873.00
length 243.00
mean wet width 15.94
spawn area 303.37
%sp hab 7.83

AREA OF RIFFLE = 1924.60 49.69
AREA OF POOL = 396.00 10.22
AREA OF RUN = 0.00 0.00
AREA OF GLIDE = 1552.40 40.08
TOTAL = 3873.00 100.00

area of riffle 1516.00 39.14
area of pool 234.00 6.04
area of run 0.00 0.00
area of glide 1172.00 30.26
area of r-p 0.00 0.00
area of r-rn 0.00 0.00
area of r-g 681.00 17.58
area of p-r 0.00 0.00
area of p-rn 0.00 0.00
area of p-g 270.00 6.97
area of rn-r 0.00 0.00
area of rn-p 0.00 0.00
area of rn-g 0.00 0.00
area of g-r 0.00 0.00
area of g-p 0.00 0.00
area of g-rn 0.00 0.00
TOTAL = 3873 100

MEAN MAX POOL DEPTH = 120.00
MEAN CHANNEL WIDTH = 26.44
MEAN RIFFLE DEPTH = 22.50
MEAN D-90 = 20.00

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SYSTEM NAME      PHILIP CREEK   SURVEY UTM  10.4602.61286          MAP#           93 0/5
REACH 1                 WATER    15.0 C.    DATE  890802        REACH LENGTH 7.8 km.
                        TURBID   100        CREW                 LENGTH SURVEYED 498 m.
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HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE (cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
P	60	15	69	2	150	200	10	1.5			0	30	80	0	0	BR R BANK
R	80	20	80	5	25	40	30	32.5	80	0.41	20	60	0	0	0	S CHAN RT LITTLE FLOW
G	46	19	80	2	35	55	25	4.5	46	0.10	15	70	0	0	0	BANKS FAILING COBBLE MID BAR
R	24	13	93	2	30	40	30	14.5	24	0.60	20	40	9	0	0	BANKS FAILING
G	24	19	55	5	20	40	30	6.5	26	0.27	10	50	5	10	1	< P RT BK W\ R WAD+LOD LFT
R	45	28	48	2	30	40	30	36.5	45	0.81	20	35	0	10	0	MID CH BAR
P	117	16	18	0	200	300		1.5			0	10	90	5	0	BRIGE BR SMALL FALLS POS BAR
G	80	14	100	20	35	40	30	22.5	80	0.28	5	10	0	0	0	
R	22	13	83	0	30	38	25	31.5	22	1.43	10	20	0	0	0	BANKS FAILING
R	24	22	22	5	20	25	35	43.5	24	1.81	30	40	0	0	0	UNSTABLE LOD BRAIDED, (SIDE CHANNEL)
P	10	22	22	0	60	100	25	1.5			10	80	40	0	0	COVER BY LOD, (SIDE CHANNEL)

```
surface  area  9428.00               AREA OF RIFFLE =      4514.00  44.36
length          498.00               AREA OF POOL   =      3212.00  31.56
mean wet width   18.93               AREA OF RUN    =         0.00   0.00
spawn area      420.12               AREA OF GLIDE  =      2450.00  24.08
%sp hab           4.46               TOTAL          =     10176.00 100.00
area of riffle            3986.00 42.28
area of pool              2992.00 31.74 MEAN MAX POOL DEPTH  =  200.00
area of run                  0.00  0.00 MEAN CHANNEL WIDTH =     67.00
area of glide             2450.00 25.99 MEAN RIFFLE DEPTH =      27.00
area of r-p                  0.00  0.00 MEAN  D-90        =      27.00
area of r-rn                 0.00  0.00
area of r-g                  0.00  0.00
area of p-r                  0.00  0.00
area of p-rn                 0.00  0.00
area of p-g                  0.00  0.00
area of rn-r                 0.00  0.00
area of rn-p                 0.00  0.00
area of rn-g                 0.00  0.00
area of g-r                  0.00  0.00
area of g-p                  0.00  0.00
area of g-rn                 0.00  0.00
                TOTAL =      9428   100
```

SYSTEM NAME PHILIP CREEK SURVEY UTM 10.4630.61257 MAP# 93 0/5
REACH 2 WATER 18.0 C. DATE 890802 REACH LENGTH 11.2 km.
CREW LENGTH SURVEYED 324 m.

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER			OVERSTREAM COVER		COMMENTS
											FRY	PARR	ADUL	CROWN	OVERHANG	
G	60	16	20	0	45	55	30	7.5	60	0.13	5	20	5	40	0	ALGAE ON SUBST
R	100	14	17	1	40	50	40	46.5	35	1.33	20	20	5	10	5	DRY SIDE CH FRY OBS
G-R	70	19	24	5	35	50	20	13.5	70	0.19	10	10	0	0	2	
R-G	53	16	25	5	25	35	30	15.5	53	0.29	5	15	5	0	3	SOME LOD
R	41	14	22	0	40	60	40	9.5	41	0.23	10	15	0	20	0	RT BANK FAILING

```
                                                         sq. m.      %
surface  area  5112.00            AREA OF RIFFLE =     3014.80   58.97
length          324.00            AREA OF POOL   =        0.00    0.00
mean width       15.78            AREA OF RUN    =        0.00    0.00
spawn area      122.90            AREA OF GLIDE  =     2097.20   41.03
%sp hab           2.40            TOTAL          =     5112.00  100.00
area of riffle          1974.00  38.62
area of pool               0.00   0.00  MEAN MAX POOL DEPTH  =
area of run                0.00   0.00  MEAN CHANNEL WIDTH  =        21.60
area of glide            960.00  18.78 MEAN RIFFLE DEPTH =           40.00
area of r-p                0.00   0.00  MEAN  D-90        =          32.00
area of r-rn               0.00   0.00
area of r-g              848.00  16.59
area of p-r                0.00   0.00
area of p-rn               0.00   0.00
area of p-g                0.00   0.00
area of rn-r               0.00   0.00
area of rn-p               0.00   0.00
area of rn-g               0.00   0.00
area of g-r             1330.00  26.02
area of g-p                0.00   0.00
area of g-rn               0.00   0.00
                TOTAL      5112    100
```

SYSTEM NAME SCOTT CREEK SURVEY UTM 10.4664.61788 MAP# 93 0/13
REACH 2 WATER 9.0 C. DATE 890703 REACH LENGTH 3.0 km.
TURBID 100 CREW BB/AM LENGTH SURVEYED 453 m.

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER			OVERSTREAM COVER		COMMENTS
											FRY	PARR	ADUL	CROWN	OVERHANG	
R	55	9	9	1	60	80	30	8.5	25	0.34		10		1	1	VEG GR BAR
R	46	6.5	6.5	1	30	50	14	3.5	46	0.08		1		10	1	,(SIDE CHANNEL)
G-P	30	8	8	0	34	50	25	1.5	30	0.05		15		20	1	SAND SUBST, (SIDE CHANNEL)
G	11	5	5	0	50	60	12	1.5	11	0.14		10		15	0	,(SIDE CHANNEL)
R	9	7.8	7.8	0	30	35	20	3.5	9	0.39		0		1	1	,(SIDE CHANNEL)
G	12	5.5	5.5	0	30	35										UNDER DEBRIS JAM
R	25	20	20	10	30	40	25	12.5	25	0.50		1		1	1	HIGH COMPACTION
R-G	20	13	14	1	55	80	20	7.5	20	0.38		15		0	15	LOG DEBRIS
R	30	22	22	0	36	100	25	27.5	30	0.92		0		0	0	SMALL GRAVEL BAR
R	13	16	16	0	45	50	30	8.5	13	0.65		0		1	1	
G-R	34	10	10.5	30	18	20	25	3.5	34	0.10		0		1	0	OPEN, (SIDE CHANNEL)
RN	30	10	10.5	0	120	150	15	3.5	30	0.12		60		1	1	DEBRIS JAM
R	30	13	15	1	50	60	20	28.5	30	0.95		0		1	0	*NOT MANY FINES, HIGH COMPACTION
G	17	11	18	0	37	60	27	4.5	17	0.26		0		0	0	MOD ALGAE HIGH VEL
RN	16	11	18	0	60	120	27	4.5	16	0.28		30		40	20	
R-G	25	11	18	0	50	65	28	4.5	25	0.18		10		1	10	
R	180	14	19	10	45	80	40	23.5	180	0.13		30		35	10	

surface area	7041.20		
length	453.00		
mean width	15.54		
spawn area	418.44		
%sp hab	5.94		
area of riffle		5142.20	73.03
area of pool		0.00	0.00
area of run		476.00	6.76
area of glide		308.00	4.37
area of r-p		0.00	0.00
area of r-rn		0.00	0.00
area of r-g		535.00	7.60
area of p-r		0.00	0.00
area of p-rn		0.00	0.00
area of p-g		0.00	0.00
area of rn-r		0.00	0.00
area of rn-p		0.00	0.00
area of rn-g		0.00	0.00
area of g-r		340.00	4.83
area of g-p		240.00	3.41
area of g-rn		0.00	0.00
	TOTAL =	7041.20	100

AREA OF RIFFLE =	6104.40	75.87
AREA OF POOL =	192.00	2.39
AREA OF RUN =	476.00	5.92
AREA OF GLIDE =	1273.00	15.82
TOTAL =	8045.40	100.00

MEAN MAX POOL DEPTH =
MEAN CHANNEL WIDTH = 13.11
MEAN RIFFLE DEPTH = 40.75
MEAN D-90 = 23.94

SYSTEM NAME	SIXMILE CREEK	SURVEY UTM	10.4746.61635	MAP#	93 0/11
WATER TEMP. (O	7	DATE	SEPT 27, 1990	REACH LENGTH 3.5 km.	
REACH	1	CREW	BB AM DJ	LENGTH SURVEYED 201 m.	
LOCATION	AT OLD BLOWN OUT BRIDGE W OF MAIN RD-UPSTREAM				

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE (cm)	RUN (m)	% SLOPE	INSTREAM COVER			OVERSTREAM COVER		COMMENTS
											FRY	PARR	ADUL	CROWN	OVERHANG	
P	14	10	16	0	50	120	25			0.00	10	25	15	10	1	DEBRIS
G	17	9	16	0	20	30	35			0.40	15	20	0	10	0	
P	10	6	16	0	40	100	30			0.10	10	30	15	25	10	UCUT BANKS & DEBRIS
RN	9	4	16	0	40	60	30			0.80	10	50	20	25	40	CHANNEL 10M WIDE
R	16	4	16	0	15	25	25			2.00	5	25	5	50	10	?
G	43	12	16	70	17	30	20			0.40	10	10	0	40	1	HIGH % FINES
R	30	8	12	5	20	30	35			1.00	20	50	0	30	1	
P	7	4	12	20	40	90	10			0.00	20	40	20	20	15	,(SIDE POOL)
R	25	8	12	5	20	30	40			2.00	30	40	0	20	1	
G	30	10	14	30	30	45	30			0.20	10	20	0	40	10	

```
                                                       sq. m.      %
surface area  1737.00            AREA OF RIFFLE =      504.00   29.02
length         194.00            AREA OF POOL   =      228.00   13.13
mean width       8.95            AREA OF RUN    =       36.00    2.07
spawn area     478.80            AREA OF GLIDE  =      969.00   55.79
%sp hab         27.56            TOTAL          =     1737.00  100.00
area of riffle           504.00  29.02
area of pool             228.00  13.13 MEAN MAX POOL DEPTH  =   166.67
area of run               36.00   2.07 MEAN CHANNEL WIDTH =      11.44
area of glide            969.00  55.79 MEAN RIFFLE DEPTH =       20.00
area of r-p                0.00   0.00 MEAN D-90 =               13.00
area of r-rn               0.00   0.00
area of r-g                0.00   0.00
area of p-r                0.00   0.00
area of p-rn               0.00   0.00
area of p-g                0.00   0.00
area of rn-r               0.00   0.00
area of rn-p               0.00   0.00
area of rn-g               0.00   0.00
area of g-r                0.00   0.00
area of g-p                0.00   0.00
area of g-rn               0.00   0.00
               TOTAL =     1737    100
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SYSTEM NAME WESTON CREEK SURVEY UTM 10.4579.61847 MAP# 93 0/13
REACH 1 WATER DATE 890701 REACH LENGTH 3.2 km.
CREW BB/AM/OF LENGTH SURVEYED 196 m.

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER			OVERSTREAM COVER		COMMENTS
											FRY	PARR	ADUL	CROWN	OVERHANG	
R-G	30	9	9	10	40	65	18	4.5	30	0.15		10		10	20	
P	25	12	12	0	120	200	12					85		0	10	D JAM POOL COMPLEX
G-R	40	9	10	10	55	100	12	11.5	40	0.29		10		10	20	U CUT BNKS
R	10	10	10	10	20	50	12	14.5	10	1.45		10		10	10	ROOTWAD MID CH BAR
P	28	9	14	20	100	200	6	6.5	28	0.23		50		1	1	U CUT BNKS LOO STABLE
G-R	28	11	13	10	45	80	15	15.5	28	0.55		25		20	20	ROOT WAD MID CH STABLE LOO
G	10	12	12	15	35	65	16	15.5	10	1.55		1		1	10	MID CH BAR
P	8	12	12	20	40	100	10					60		1	1	MID CH JAM
R-G	17	11	11	10	100	1.3	16					25		25	10	BERM HEAD

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                                                             sq. m.      %
surface  area  1993.00              AREA OF RIFFLE =        641.40   32.18
length          196.00              AREA OF POOL   =        648.00   32.51
mean width       10.17              AREA OF RUN    =          0.00    0.00
spawn area      210.10              AREA OF GLIDE  =        703.60   35.30
%sp hab          10.54              TOTAL          =       1993.00  100.00
area of riffle            100.00  5.02
area of pool              648.00 32.51 MEAN MAX POOL DEPTH  =  1666.67
area of run                 0.00  0.00 MEAN CHANNEL WIDTH =      11.44
area of glide             120.00  6.02 MEAN RIFFLE DEPTH =       20.00
area of r-p                 0.00  0.00 MEAN  D-90        =       13.00
area of r-rn                0.00  0.00
area of r-g               457.00 22.93
area of p-r                 0.00  0.00
area of p-rn                0.00  0.00
area of p-g                 0.00  0.00
area of rn-r                0.00  0.00
area of rn-p                0.00  0.00
area of rn-g                0.00  0.00
area of g-r               668.00 33.52
area of g-p                 0.00  0.00
area of g-rn                0.00  0.00
                 TOTAL =  1993.00  100
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SYSTEM NAME WESTON CREEK SURVEY UTM 10.4618.61836 ABOVE MAIN XING MAP# 93 0/13
REACH 2 WATER 8.5 C. DATE JULY 2, 1989 REACH LENGTH 3.7 km.
CREW BB/AM/OF LENGTH SURVEYED 180.5 m.

HABITAT TYPE	LENGTH (m.)	WETTED WIDTH	CHANNEL WIDTH	SPAWNING HABITAT	MEAN DEPTH	MAXIMUM DEPTH	D-90 (cm.)	RISE(cm.)	RUN (m.)	% SLOPE	INSTREAM COVER FRY	PARR	ADUL	OVERSTREAM COVER CROWN	OVERHANG	COMMENTS
R	43	11.7	25	1	40	60	30	30.5	43	0.71		15		1	1	ROOT WAD
G	10.5	10.5	17	1	35	60	17	8.5	10.5	0.81		1		1	1	3 M WIDE BAR ON SIDE
P	17	6.2	13	0	50	95	10					30		1	1	,(SIDE CHANNEL)
R	10	5.6	13	0	40	70	10					20		1	1	
R	10	11	17	10	30	40	10	13.5	10	1.35		10		1	1	CONTINUED
G	14	8.5	14	0	40	70	25	6.5	14	0.46		10		1	1	V/ UNSTABLE BANKS
R	14	11	12	0	25	40	25	26.5	14	1.89		0		1	1	SAME
G	14	7	9	0	45	65	25	10.5	14	0.75		10		1	1	SAME
P	20	5.5	5.5	0	70	100	40	5.5	20	0.28		65		10	1	DEBRIS JAM
R	45	8.5	10	0	40	60	60	69.5	45	1.54		10		10	10	

```
                                                        sq. m.       %
surface area  1748.25            AREA OF RIFFLE =       1205.60     65.04
length         180.50            AREA OF POOL   =        320.80     17.31
mean width       9.69            AREA OF RUN    =          0.00      0.00
spawn area      17.13            AREA OF GLIDE  =        327.25     17.65
%sp hab          0.98            TOTAL          =       1853.65    100.00
area of riffle          1205.60  68.96
area of pool             215.40  12.32 MEAN MAX POOL DEPTH  =        97.50
area of run                0.00   0.00 MEAN CHANNEL WIDTH =          13.55
area of glide            327.25  18.72 MEAN RIFFLE DEPTH =           35.00
area of r-p                0.00   0.00 MEAN  D-90         =          25.20
area of r-rn               0.00   0.00
area of r-g                0.00   0.00
area of p-r                0.00   0.00
area of p-rn               0.00   0.00
area of p-g                0.00   0.00
area of rn-r               0.00   0.00
area of rn-p               0.00   0.00
area of rn-g               0.00   0.00
area of g-r                0.00   0.00
area of g-p                0.00   0.00
area of g-rn               0.00   0.00
              TOTAL =   1748.25   100
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ELECTROFISHING SURVEY DATA

KEY FOR ELECTROFISHING SUMMARY

WILLISTON WATERSHED

STREAM NAME	DATE	REACH	U.T.M. SITE	WATER TEMP.	SITE S.A.	SP.	NO		X FL.	RANGE		X WT	RANGE		DENSITY	BIOMASS
1	2	3	4	5	6	7	8		9	10		11	12		13	14

1. "STREAM NAME"- Gazetted or alias stream name.

2. "DATE"- Entered in the form YYMMDD (year month day)

3. "REACH"- Reach within the stream where survey occured.

4. "U.T.M. SITE"- location of study site utilizing the Universal Transverse Mercator grid.

5. "WATER TEMP."- Water temperature (centigrade) obtained with a hand held alcohol thermometer.

6. "SITE S.A."- Surface area (square meters) of location studied.

7. "SP."- Species code of fish captured. An age of 0+ denotes young of the year. RB* denotes hatchery rainbow trout (See species code key in Appendix I)

8. "NO"- Number of fish captured.

9. "X FL"- Mean fork length (mm.)

10. "RANGE"- Smallest fork length to the largest fork length.

11. "X WT"- Mean weight (g.)

12. "RANGE*- Smallest weight to the largest weight.

13. "DENSITY"- Number of fish captured divided by the surface area. Result is number of fish per square meter.

14. "BIOMASS"- Density multiplied by mean fish weight. Result is grams of fish per square meter.

ELECTROFISHING SUMMARY WILLISTON WATERSHED

STREAM NAME	DATE	REACH	U.T.M. SITE	WATER TEMP	SITE S.A.	SP	NO	X FL	RANGE	X WT	RANGE	DENSITY	BIOMASS
AKIE	890824	1	10.3736.63246	8	500	CC	8	68.9	22-90	4.9	2.3-6.2	0.016	0.078
"	"	"	"	"	500	DV	3	167.67	100-216	48.97	5-83.2	0.006	0.294
"	"	"	"	"	500	MW	84	65.10	40-107	4.66	0.7-11.9	0.168	0.783
"	"	"	"	"	500	RB	1	192.00	-	89.70	-	0.002	0.179
BLACKWATER	900905	2	10.4561.61577	13	300	CC	11	-	-	-	-	-	-
"	"	"	"	"	300	RB	1	-	-	-	-	-	-
BLACKWATER	900907	TRIB 1	10.4566.61531	10	160	BB	5	172.2	125-195	34.68	28.3-41.0	0.031	1.084
"	"	"	"	"	160	CC	5	53.2	36-72	2.04	0.6-4.0	0.031	0.064
"	"	"	"	"	160	DV	2	128.5	115-142	10.05	6.1-41.3	0.013	0.126
"	"	"	"	"	160	RBO+	5	45	38-53	1.06	0.7-1.7	0.031	0.033
"	"	"	"	"	160	RB	9	105.4	79-147	16.11	6.1-41.3	0.056	0.906
BLACKWATER	900906	TRIB 2	10.4556.61564	10	296	BB	1	165	-	28.2	-	0.003	0.095
"	"	"	"	"	296	CC	13	57.77	30-85	2.63	0.4-5.8	0.044	0.116
"	"	"	"	"	296	RBO+	2	40	35-45	0.75	0.6-0.9	0.007	0.005
"	"	"	"	"	296	RB	4	115.5	82-135	20.28	6.5-36.7	0.014	0.274
BLACKWATER	900906	TRIB 2	10.4555.61564	10	120	CC	22	50.64	30-84	1.79	0.3-6.5	0.183	0.328
"	"	"	"	"	120	RBO+	7	34.57	30-40	0.53	0.3-0.8	0.058	0.031
"	"	"	"	"	120	RB	4	143	116-160	35.8	17.9-51.7	0.033	1.193
BLACKWATER	900831	TRIB 4	10.4516.61594	9.5	45	CC	6	57.67	41-79	3.02	0.8-6.5	0.133	0.403
"	"	"	"	"	45	DV	1	104	-	10.5	-	0.022	0.233
"	"	"	"	"	45	RBO+	8	32.75	29-37	0.38	0.3-0.5	0.178	0.068
"	"	"	"	"	45	RB	13	98.69	58-183	14.06	2.2-68.5	0.289	4.062
BRUIN	890823	1	10.4145.62614	12	300	CCG	13	57.85	36-86	2.63	0.4-6.5	0.043	0.114
"	"	"	"	"	300	DVO+	10	58.10	43-89	2.21	0.7-6.2	0.033	0.074
"	"	"	"	"	300	DV	4	163.50	122-200	46.20	16.1-83.3	0.013	0.616
CARBON	890715	1 SITE 1	10.5219.61994	8	510	CC	50	61.76	26-99	3.24	0.1-10.0	0.098	0.318
"	"	"	"	"	510	DV	4	209.00	161-238	105.23	38-155.9	0.008	0.825
"	"	"	"	"	510	MW	1	276.00	-	268.90	-	0.002	0.527
CARBON	890715	1 SITE 2	10.5216.61996	8	600	CC	20	74.2	40-101	4.52	0.6-10.9	0.033	0.151
"	"	"	"	"	600	DV	1	157.00	-	37.10	-	0.002	0.062
CARBON	890718	3	10.5222.61961	10	700	CC	18	71.22	51-108	4.24	1.2-14.0	0.026	0.109
"	"	"	"	"	700	DV	2	131.00	104-158	26.95	11.1-42.8	0.003	0.077
CARBON	890718	4	10.5232.61886	10	390	CC	3	32	22-49	0.53	0.1-1.3	0.008	0.246

ELECTROFISHING SUMMARY WILLISTON WATERSHED

STREAM NAME	DATE	REACH	U.T.M. SITE	WATER TEMP.	SITE S. A.	SP.	NO		X FL	RANGE		X WT	RANGE		DENSITY	BIOMASS
CARBON	900814	3	10.5222.61961	10.5	3600	CC	14		84.21	39-110		-	-		0.004	0.000
"	"	"	"	"	3600	RB*	19		139.32	113-156		28.57	17.4-43.2		0.005	0.151
CARBON	910821	3	10.5222.61961	9	1200	DV	4		172.25	160-180		51.33	41.1-61.6		0.003	0.171
"	"	"	"	"	1200	RB*	9		150.33	120-165		38.21	19.3-52.2		0.008	0.287
CARBON	900912	3	10.5222.61986	-	280	DV	1		132	-		24.1	-		0.004	0.086
"	"	"	"	"	280	RB*	19		147.58	112-174		36.02	16.2-63.2		0.068	2.444
CARBON SIDE CHANNEL	910719	-	10.5212.61842	-	188	DV	2		112.5	100-125		30.95	10.7-25.6		0.011	0.329
"	"	"	"	"	188	CC	1		60	-		-	-		0.005	0.000
CARBON SIDE CHANNEL	910822	-	10.5212.61842	8	188	RB*	31		150.87	93-189		40.21	9.3-97.0		0.165	6.630
"	"	"	"	"	188	DV	1		146	-		33.9	-		0.005	0.180
CARBON (MCALLISTER)	890718	1	10.5245.61911	11	200	DV	1		157.00	-		45.00	-		0.005	0.225
CHICHOUYENILY	900823	1	10.4921.61294	10	760	CC	43		56.23	36-86		-	-		0.057	0.000
"	"	"	"	"	760	DV	2		250.5	228-273		151.75	122.1-181.4		0.003	0.399
"	"	"	"	"	760	RB	7		128.57	97-162		28.34	11-56.6		0.009	0.261
CHOWIKA	890826	1	10.3945.62900	8	190	CCG	5		54.60	40-99		3.14	0.6-12.2		0.026	0.083
"	"	"	"	"	190	DV 0+	21		46.52	33-75		1.09	0.4-4.5		0.111	0.120
CLEARWATER	890927	1	10.4900.61930	7	590	CCG	5		99.4	74-113		10.88	3.9-17.0		0.008	0.092
"	"	"	"	"	590	DV 0+	7		60.86	40-76		2.63	0.7-4.0		0.012	0.031
"	"	"	"	"	590	DV	2		131	108-154		21.85	11.8-31.9		0.003	0.074
CLEARWATER	890928	2	10.4928.61855	7.5	330	DV 0+	7		74.71	64-87		4.46	2.4-6.2		0.021	0.095
"	"	"	"	"	330	DV	2		118.50	112-125		16.70	12.7-20.7		0.006	0.101
"	"	"	"	"	330	RB 0+	5		64.80	45-97		4.38	1.1-11		0.015	0.066
CLEARWATER (DUCETTE)	890927	1	10.4924.61991	N/A	525	CCG	11		72	47-88		4.16	1.2-7.5		0.021	0.087
"	"	"	"	"	525	DV 0+	11		98.64	66-115		9.83	3.3-15.6		0.021	0.206
"	"	"	"	"	525	DV	2		184.00	174-194		53.35	45.5-61.2		0.004	0.203
"	"	"	"	"	525	RB 0+	1		102	-		10.6	-		0.002	0.020
CLEARWATER (MACKIN)	890928	1	10.4927.61852	7.5	350	DV	8		78.13	56-98		5.51	1.8-9.6		0.023	0.126
"	"	"	"	"	350	RB 0+	6		34.17	32-37		0.42	0.3-0.6		0.017	0.007
CLEARWATER (TRIB)	890928	1	10.4900.61902	6.5	200	DV 0+	10		52.20	44-57		1.50	1.1-1.8		0.050	0.075
"	"	"	"	"	200	DV	1		126.00	-		23.40	-		0.005	0.117
"	"	"	"	"	200	GR	1		56	-		1.6	-		0.005	0.008

ELECTROFISHING SUMMARY WILLISTON WATERSHED

STREAM NAME	DATE	REACH	U.T.M. SITE	WATER TEMP.	SITE S.A.	SP	NO	X FL	RANGE	X WT	RANGE	DENSITY	BIOMASS
COLLINS	890823	1	10.4152.62564	9.5	300	CC	5	91.40	47-105	9.94	1.0-13.5	0.017	0.166
"	"	"	"	"	300	DV	2	98.00	96-99	10.05	9.6-10.5	0.007	0.067
"	"	"	"	"	300	DV 0+	2	47.00	44-50	1.25	1.0-1.5	0.007	0.008
"	"	"	"	"	300	MW	3	219.00	210-232	136.20	114.4-151.7	0.010	1.362
CUTTHUMB	900926	1	10.4806.61553	7.5	600	CCG	18	57.67	43-95	-	-	0.030	0.000
"	"	"	"	"	600	DV	3	165.33	154-188	48.57	37.4-67.3	0.005	0.243
"	"	"	"	"	600	RB 0+	21	48.24	36-55	1.37	0.6-2.1	0.035	0.048
"	"	"	"	"	600	RB	3	114	103-128	18	13.0-24.9	0.005	0.090
DAVIS	890826	1	10.4095.62679	10.5	300	CC	3	50	23-82	2.3	0.1-5.9	0.010	0.023
"	"	"	"	"	300	DV	1	90.00	-	6.30	-	0.003	0.021
"	"	"	"	"	300	DV 0+	26	51.15	43-56	1.13	0.7-1.7	0.171	0.193
"	"	"	"	"	300	LSU	4	47.75	41-52	1.13	0.9-1.4	0.013	0.015
DUNLEVY (DRESSER)	890713	1	10.5375.62276	11.5	320	CC	42	59.93	41-94	2.35	0.5-8.2	0.131	0.308
"	"	"	"	"	300	DV	2	223.00	205-241	101.50	77-126	0.007	0.677
"	"	"	"	"	300	MW	2	235.00	219-251	155.05	124-186	0.007	1.034
"	"	"	"	"	300	RB	17	85.82	66-151	8.32	3.0-43.3	0.057	0.471
DUNLEVY (DRESSER)	890719	2	10.5387.62296	11.5	560	CCG	26	73.62	45-102	4.23	0.9-9.3	0.046	0.196
"	"	"	"	"	560	RB	7	79.00	70-92	6.23	4.6-8.7	0.013	0.078
DUNLEVY	890713	1	10.5384.62253	10	1000	CC	77	71.49	36-116	4.47	0.5-13.5	0.077	0.344
"	"	"	"	"	1000	DV	1	249.00	-	142.20	-	0.001	0.142
"	"	"	"	"	1000	MW	12	235.08	135-311	158.45	26.6-310	0.012	1.901
"	"	"	"	"	1000	RB	5	111.60	70-168	21.98	3.5-52.5	0.005	0.110
DUNLEVY	900816	1	10.5376.62275	15	455	CC	45	58.51	40-90	-	-	0.099	0.000
"	"	"	"	"	455	RB*	24	123.58	100-164	22.53	8.4-44.1	0.053	1.188
"					455	RB0+	10	35.1	32-38	0.34	0.1-0.5	0.022	0.007
"	"	"	"	"	455	RB	3	85.75	81-100.2	8.53	5.1-13.3	0.029	0.064
"	"	"	"	"	455	MW	1	130.3	-	22.3	-	0.002	0.049
DUNLEVY	910721	1	10.5376.62275	12	455	RB	5	110.8	81-155	20.66	7.0-47.8	0.011	0.227
"	"	"	"	"	455	RB*	2	151.5	133-170	42.7	30.3-47.8	0.004	0.188
"	"	"	"	"	455	MW	5	220.8	165-250	-	-	0.011	0.000
"	"	"	"	"	455	DV	2	275	235-315	-	-	0.004	0.000
DUNLEVY	910824	1	10.5376.62275	11	455	RB	18	102.33	74-141	12.88	5.0-31.1	0.040	0.510
"	"	"	"	"	455	RB0+	6	43.83	38-48	0.95	0.5-1.3	0.013	0.013
"	"	"	"	"	455	RB*	3	126	123-130	19.83	17.7-22.0	0.007	0.131
"	"	"	"	"	455	DV	3	250	212-302	139.43	92.3-200	0.007	0.919
"	"	"	"	"	455	MW	2	126	75-177	36.3	3.8-68.8	0.004	0.160

ELECTROFISHING SUMMARY WILLISTON WATERSHED

STREAM NAME	DATE	REACH	U.T.M. SITE	WATER TEMP	SITE S. A.	SP	NO	X FL	RANGE	X WT	RANGE	DENSITY	BIOMASS
DUNLEVY	900816	1	10.5374.62295	17	210	RB*	34	120	87-166	19.34	6.7-45.5	0.162	3.131
"	"	"	"	"	210	RB0+	12	33.75	28-41	-	-	0.057	0.000
"	"	"	"	"	210	RB	9	112.67	86-172	18.32	7.1-57.0	0.043	0.785
"	"	"	"	"	210	CC	25	61.52	32-91	-	-	0.119	0.000
"	"	"	"	"	210	MW	2	170	141-199	58.25	30.3-86.2	0.010	0.555
DUNLEVY	910721	1	10.5374.62295	12	997.5	RB	25	92.48	75-126	10.28	5.3-26.0	0.025	0.258
"	"	"	"	"	997.5	RB*	11	146.45	120-167	37.34	16.7-59.3	0.011	0.412
DUNLEVY	910824	1	10.5374.62295	11	735	RB*	87	148.25	101-196	33.75	9.4-87.9	0.118	3.995
"	"	"	"	"	735	RB	26	92.62	74-110	8.83	4.6-15.3	0.035	0.312
"	"	"	"	"	735	RB0+	3	42.67	40-47	1	0.7-1.4	0.004	0.004
DUNLEVY	910721	1	10.5375.62276	15	1500	RB	13	115.08	74-182	24.87	5.0-85.0	0.009	0.216
"	"	"	"	"	1500	RB*	2	170	140-200	68.95	31.8-106.1	0.001	0.092
"	"	"	"	"	1500	MW	7	236.57	209-273	149.8	117.2-176.8	0.005	0.699
DUNLEVY	890716	2	10.5374.62294	14	1000	CC	150	62.81	31-103	3.79	0.3-11.2	0.150	0.569
LAFFERTY	890823	3	10.4232.62471	10	175	CCG	33	60.27	32-84	2.58	0.4-6.1	0.189	0.487
"	"	"	"	"	175	DV 0+	1	55	-	1.8	-	0.006	0.010
"	"	"	"	"	175	RB 0+	2	61	28-94	5.6	0.2-11.0	0.011	0.064
"	"	"	"	"	175	RB	1	190.00	-	95.40	-	0.006	0.545
MANSON	890809	1	10.4443.61717	15.5	300	CC	20	62.95	21-92	3.21	0.1-8.5	0.067	0.214
"	"	"	"	"	300	NSC	1	70.00	-	3.60	-	0.003	0.012
"	"	"	"	"	300	RB 0+	16	36.25	32-45	0.49	0.3-1.1	0.053	0.026
"	"	"	"	"	300	RB	5	116.60	74-205	28.68	4.1-105.9	0.017	0.478
"	"	"	"	"	300	RSC	1	76.00	-	6.10	-	0.003	0.020
"	"	"	"	"	300	SU	1	58	-	1.8	-	0.003	0.006
MANSON	890808	3	10.4365.61675	14.5	420	BB	4	164.00	60-305	50.93	9-161	0.010	0.485
"	"	"	"	"	420	CC	20	53.1	36-75	1.8	0.6-4.5	0.048	0.086
"	"	"	"	"	420	RB 0+	7	37.43	34-42	0.43	0.3-0.6	0.017	0.007
"	"	"	"	"	420	RB	1	95.00	-	8.20	-	0.002	0.020
MANSON	890807	4	10.4333.61561	13	360	BB	3	128.67	105-146	13.77	7-17.7	0.008	0.115
"	"	"	"	"	360	CCG	8	62.63	20-84	3.51	0.05-6.9	0.022	0.078
"	"	"	"	"	360	DC	1	52.00	-	1.60	-	0.003	0.004
"	"	"	"	"	360	MW	1	59.00	-	2.00	-	0.003	0.006
"	"	"	"	"	360	RB 0+	2	40.50	40-41	0.60	0.6	0.006	0.003
"	"	"	"	"	360	RB	8	121.63	100-155	24.28	11.1-54.0	0.022	0.540

ELECTROFISHING SUMMARY WILLISTON WATERSHED

STREAM NAME	DATE	REACH	U.T.M SITE	WATER TEMP.	SITE S.A.	SP.	NO	X FL	RANGE	X WT	RANGE	DENSITY	BIOMASS
MANSON	890808	5	10.4271.61553	15.5	340	BB	10	74.50	55-107	3.20	1.3-7.8	0.029	0.094
"	"	"	"	"	340	CCG	61	55.43	19-82	2.06	0.1-5.7	0.179	0.370
"	"	"	"	"	340	LNC	19	50.53	23-81	1.35	0.1-5.0	0.056	0.075
"	"	"	"	"	340	RB 0+	4	37.25	35-40	0.45	0.3-0.6	0.012	0.005
"	"	"	"	"	340	RB	1	110.00	-	11.90	-	0.003	0.035
MANSON	890809	6	10.4229.61568	15.5	200	BB	1	106.00	-	7.10	-	0.005	0.036
"	"	"	"	"	200	CC	5	49.40	38-69	1.60	0.6-3.5	0.025	0.040
"	"	"	"	"	200	DC	1	54.00	-	1.80	-	0.005	0.009
"	"	"	"	"	200	MW	2	134.00	129-139	22.05	19-25.1	0.010	0.221
"	"	"	"	"	200	RB 0+	2	46.00	39-51	1.20	0.7-1.7	0.010	0.012
"	"	"	"	"	200	RB	6	179.83	123-264	75.75	19.8-212.7	0.030	2.273
MANSON (CARMELLA)	910828	N/A	104336.61676	8	150	DV 0+	1	46	-	0.9	-	0.007	0.006
"	"	"	"	"	150	DV	3	175.67	101-295	111.73	11.7-300	0.020	2.235
"	"	"	"	"	150	RB	1	118	-	22.2	-	0.007	0.148
MANSON (DONNA)	890809	1	10.4242.61570	11.5	250	CC	14	74.36	55-86	5.19	1.8-8.0	0.056	0.291
"	"	"	"	"	250	RB 0+	10	47.40	41-54	0.98	0.8-1.3	0.040	0.186
"	"	"	"	"	250	RB	1	98	-	11.2	-	0.004	0.045
"	"	"	"	"	250	MW	1	304	-	291	-	0.004	1.164
MANSON (DONNA)	910827	1	10.4242.61570	8	250	CC	3	84.33	81-86	7.07	6.4-7.9	0.012	0.085
"	"	"	"	"	250	RB	1	121	-	20	-	0.004	0.080
MANSON (GAFFNEY)	890808	1	10.4270.61550	17.5	560	BB	4	164.00	123-260	30.43	10.2-85.4	0.007	0.217
"	"	"	"	"	560	CC	44	55.93	20-79	2.25	0.1-4.8	0.079	0.177
"	"	"	"	"	560	LNC	2	67.5	66-69	3.75	3.4-4.1	0.004	0.013
"	"	"	"	"	560	RB 0+	34	37.97	26-44	0.61	0.1-0.9	0.061	0.037
"	"	"	"	"	560	RB	3	139.00	90-177	37.73	7.7-66.7	0.005	0.202
MANSON (GAFFNEY)	910827	1	10.4270.61550	11	560	CC	4	44.25	39-51	0.88	0.6-1.2	0.007	0.006
"	"	"	"	"	560	BB	3	96.33	69-110	6.27	3.3-7.8	0.005	0.034
"	"	"	"	"	560	RB0+	3	49.67	48-53	1.4	1.1-1.8	0.005	0.008
MANSON (MUNRO)	890807	1	10.4339.61549	10	150	CC	2	37.00	35-39	0.5	0.4-0.6	0.013	0.007
"	"	"	"	"	150	DV 0+	1	53.00	-	1.50	-	0.007	0.010
"	"	"	"	"	150	DV	1	132.00	-	21.00	-	0.007	0.140
MANSON (MUNRO)	910828	1	10.4339.61549	8	150	CC	2	61	41-81	2.95	0.6-5.3	0.013	0.039

ELECTROFISHING SUMMARY WILLISTON WATERSHED

STREAM NAME	DATE	REACH	U.T.M SITE	WATER TEMP.	SITE S.A.	SP.	NO	X FL	RANGE	X WT	RANGE	DENSITY	BIOMASS
MANSON (UNNAMED TRIB)	910827	N/A	10.4216.61553	8	350	RB 0+	1	73	-	4.9	-	0.003	0.014
"	"	"	"	"	350	RB	3	128	101-156	29.9	12.4-54.3	0.009	0.256
MANSON (WINN)	910828	N/A	10.4351.61596	8	188	DV	2	135	87-183	30.9	7.8-54	0.011	0.329
"	"	"	"	"	188	RB 0+	1	74	-	4.9	-	0.005	0.026
"	"	"	"	"	188	RB	5	100.2	73-139	14.3	8.7-31.1	0.027	0.380
MISINCHINKA	900827	4 SITE 1	10.5234.61304	12.5	900	BB	2	155.5	155-156	20.05	18.5-21.6	0.002	0.045
"	"	"	"	"	900	CCG	23	55	40-91	2.29	0.7-9.5	0.026	0.059
"	"	"	"	"	900	DV 0+	2	41	-	0.85	0.7-1.0	0.002	0.002
"	"	"	"	"	900	DV	2	172.5	167-178	45.7	41.3-50.1	0.002	0.102
"	"	"	"	"	900	RB 0+	1	43	-	0.7	-	0.001	0.001
"	"	"	"	"	900	RB	1	111	-	14	-	0.001	0.016
MISINCHINKA	900820	4 SITE 2	10.5255.61326	12	130	BB	3	159	151-164	21.53	17.9-23.9	0.023	0.497
"	"	"	"	"	130	CC	29	62.24	44-98	3.33	0.8-8.7	0.223	0.743
"	"	"	"	"	130	RB 0+	14	38.93	28-49	0.66	0.2-1.3	0.108	0.071
MISINCHINKA	900829	4 SITE 3	10.5206.61281	12	108	CCG	14	43.79	37-50	0.91	0.6-1.2	0.130	0.118
"	"	"	"	"	108	RB 0+	2	44	-	0.9	-	0.019	0.017
MISINCHINKA	900828	6 SITE 1	10.5306.61255	9.5	160	DV 0+	12	54.75	43-66	1.78	1.0-2.6	0.075	0.134
"	"	"	"	"	160	DV	9	114.44	94-133	16.58	9.7-24.3	0.056	0.933
MUGAHA	900801	1	10.4886.61386	11	415	BB	2	112.7	135-190	24.65	13.9-35.4	0.005	0.119
"	"	"	"	"	415	CC	67	67.89	45-95	-	-	0.161	0.000
"	"	"	"	"	415	MW	24	62.54	54-71	2.03	1.1-3.2	0.058	0.117
"	"	"	"	"	415	NSC	2	46.5	43-50	-	-	0.005	0.000
"	"	"	"	"	415	RB	5	89.2	79-98	7.78	5.9-10.0	0.012	0.094
"	"	"	"	"	415	SU	2	95.5	93-101	-	-	0.005	0.000
MUGAHA	900802	2	10.4923.61429	11	970	CC	28	69.96	33-105	-	-	0.029	0.000
"	"	"	"	"	970	MW	4	147.5	116-226	51.58	12.9-157.1	0.004	0.213
"	"	"	"	"	970	RB	10	110.9	84-149	18.15	7.1-41.4	0.010	0.187
NABESCHE	910808	3	10.4919.62369	15	3000	DV	2	158	153-163	41.6	39.4-43.8	0.001	0.028
NABESCHE	910809	5	10.4846.62381	10	1750	NONE	-	-	-	-	-	-	-
NABESCHE	910815	-	10.4783.62444	11	700	DV	1	288	-	287	-	0.001	0.410
NABESCHE (EMERSLUND)	910808	1	10.4917.62372	15	1000	DV 0+	2	49.5	46-53	1.4	1.0-1.8	0.002	0.003
"	"	"	"	"	1000	DV	7	144.86	102-219	44.46	9.8-124.8	0.007	0.311

ELECTROFISHING SUMMARY WILLISTON WATERSHED

STREAM NAME	DATE	REACH	U.T.M. SITE	WATER TEMP.	SITE S.A.	SP	NO	X FL	RANGE	X WT	RANGE	DENSITY	BIOMASS
NATION	890803	1	10.4599.61419	19	200	BB	1	80.00	-	4.10	-	0.005	0.021
"	"	"	"	"	200	CCG	25	52.32	41-67	1.53	0.6-2.9	0.125	0.191
"	"	"	"	"	200	LSU	8	57.13	51-68	1.94	1.1-3.4	0.040	0.078
NATION	890804	2	10.4563.61363	18.5	525	CC	1	51.00	-	1.40	-	0.002	0.003
"	"	"	"	"	525	DC	2	49.00	44-54	1.10	0.6-1.6	0.004	0.004
"	"	"	"	"	525	GR	4	58.00	51-68	1.90	1.2-3.0	0.008	0.014
"	"	"	"	"	525	RB 0+	1	82.00	-	6.60	-	0.002	0.013
"	"	"	"	"	525	RB	1	119	-	20.4	-	0.002	0.039
"	"	"	"	"	525	RSC	1	54.00	-	1.70	-	0.002	0.003
NATION	890804	3	10.4563.61320	19	330	RB	3	160.00	128-211	24.87	14.0-43.4	0.009	0.226
"	"	"	"	"	330	CC	23	55.48	23-68	2.08	0.1-3.6	0.070	0.145
"	"	"	"	"	330	LNC	13	45.77	21-90	1.53	0.1-6.8	0.039	0.060
"	"	"	"	"	330	RB	3	85.33	41-115	8.23	0.7-14.3	0.009	0.075
"	"	"	"	"	330	SU	2	23.00	21-25	0.10	0.1	0.006	0.001
NATION (PHILIP)	890802	1 SITE A	10.4602.61285	16.5	2000	CC	19	60.63	42-88	2.75	0.8-6.8	0.010	0.026
"	"	"	"	"	2000	LNC	6	76.33	49-109	6.43	1.4-14.4	0.003	0.019
"	"	"	"	"	2000	MW	6	77.50	55-141	4.91	1.4-26.8	0.003	0.015
"	"	"	"	"	2000	RB 0+	30	39.97	33-49	0.69	0.3-1.4	0.015	0.010
"	"	"	"	"	2000	RB	8	102.63	88-149	11.46	6.3-31.1	0.004	0.046
NATION (PHILIP)	890802	1 SITE B	10.4603.61284	16	335	BB	2	135.00	115-155	16.05	10.1-22	0.006	0.096
"	"	"	"	"	335	CC	21	55.81	25-81	2.49	0.3-5.5	0.063	0.156
"	"	"	"	"	335	DV	1	113.00	-	14.80	-	0.003	0.044
"	"	"	"	"	335	LNC	1	92.00	-	9.00	-	0.003	0.027
"	"	"	"	"	335	MW	1	250.00	-	188.30	-	0.003	0.562
"	"	"	"	"	335	RB 0+	9	44.78	38-54	1.02	0.5-1.1	0.027	0.027
"	"	"	"	"	335	RB	6	119.50	91-193	22.60	7.1-77.6	0.018	0.405
NATION (PHILIP)	890802	2	10.4630.61257	17.5	1440	CCG	14	52.29	24-76	2.09	0.1-5.5	0.010	0.020
"	"	"	"	"	1440	RB 0+	47	41.15	32-52	0.57	0.1-1.3	0.033	0.019
"	"	"	"	"	1440	RB	4	125.25	93-158	25.70	8.1-47.7	0.003	0.071
NATION (PHILIP)	890805	4	10.4615.61063	16.5	400	BB	5	107.40	90-140	8.18	4.3-15.9	0.013	0.102
"	"	"	"	"	400	CAS	9	69.44	51-100	3.01	1.2-10.8	0.023	0.068
"	"	"	"	"	400	CCG	15	59.6	31-82	3.05	0.5-7.3	0.038	0.114
"	"	"	"	"	400	CSU	1	40	-	1	-	0.003	0.003
"	"	"	"	"	400	MW	7	171.43	130-250	59.17	19.1-158.7	0.018	1.036
"	"	"	"	"	400	RB	10	140.80	100-176	32.49	9.9-59.7	0.025	0.812
"	"	"	"	"	400	RSC	2	92.50	70-115	10.70	4.4-17.0	0.005	0.054

ELECTROFISHING SUMMARY WILLISTON WATERSHED

STREAM NAME	DATE	REACH	U.T.M. SITE	WATER TEMP.	SITE S.A.	SP.	NO	X FL	RANGE	X WT	RANGE	DENSITY	BIOMASS
PESIKA	890825	1	10.3772.63176	9	150	CCG	1	89.00	-	6.90	-	0.007	0.046
"	"	"	"	"	150	DV 0+	4	47.00	46-49	1.00	0.9-1.2	0.027	0.027
"	"	"	"	"	150	DV	1	70.00	-	3.20	-	0.007	0.021
"	"	"	"	"	150	MW	3	48.00	42-58	0.93	0.6-1.6	0.020	0.019
SCHOOLER	890717	1 SITE 1	10.5142.62212	13	225	DV	9	144.00	82-217	38.21	6.5-109.4	0.040	1.528
"	"	"	"	"	225	MW	1	279.00	-	295.70	-	0.004	1.314
SCHOOLER	890716	1 SITE 2	10.5137.62245	12.7	500	DV	11	101.09	76-178	14.55	5.0-64.9	0.022	0.320
SCHOOLER	890716	2	10.5120.62276	8	500	NONE	-	-	-	-	-	0.000	0.000
SCOTT	890703	3	10.4664.61787	9	1000	CC	26	60.62	27-96	3.19	0.3-10.5	0.026	0.083
"	"	"	"	"	1000	DV 0+	7	31.29	28-33	0.29	0.2-0.4	0.031	0.009
"	"	"	"	"	1000	DV	29	82.17	71-141	7.07	4.0-28.2	0.029	0.205
"	"	"	"	"	1000	RB	1	97.00	-	10.10	-	0.001	0.010
SIX MILE	900927	1	10.4746.61634	6	355	CCG	18	66.5	39-101	3.86	0.7-13.3	0.051	0.196
"	"	"	"	"	355	DV 0+	10	50.3	44-55	1.35	0.7-1.8	0.028	0.038
"	"	"	"	"	355	DV	1	120	-	18.6	-	0.003	0.052
"	"	"	"	"	355	RB 0+	14	37.21	28-43	0.59	0.2-1.0	0.039	0.023
WESTON	890630	1	10.4579.61848	9	450	CC	9	70.33	44-90	4.2	1.3-7.4	0.020	0.084
"	"	"	"	"	450	DV	2	65.50	61-70	2.90	2.4-3.4	0.004	0.013
"	"	"	"	"	450	MW	23	211.17	170-246	110.91	44-180	0.051	5.669
"	"	"	"	"	450	RB 0+	1	48.00	-	1.60	-	0.002	0.004
"	"	"	"	"	450	RB	2	114.00	85-143	17.80	7.6-28.0	0.004	0.079
WESTON	890702	2	10.4618.61836	8	500	CC	9	67.78	50-83	-	-	0.018	0.000
"	"	"	"	"	500	DV	2	128.00	118-138	23.95	18.5-29.4	0.004	0.096

ELECTROFISHING DATA

SYSTEM: AKIE DATE: 89/08/24 WATER TEMP.: 8.0 C.
REACH#: 1 SURFACE AREA: 500 sq.m. MAP#: 94 F/3
LOCATION: DOWNSTREAM FROM BRIDGE CROSSING. (U.T.M. 10.3736.63246)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
MW	49	1.2	-	MW	51	1.2	-	MW	52	7.1	-	MW	54	-	-
MW	53	1.7	-	MW	49	1.3	-	MW	54	1.3	-	MW	51	-	-
MW	49	1.2	-	MW	44	0.7	-	MW	56	1.7	-	MW	41	-	-
MW	51	1.5	-	MW	55	1.7	0	MW	40	0.8	-	MW	50	-	-
MW	56	1.7	0	MW	57	1.6	-	MW	60	-	-	MW	50	-	-
MW	60	2.1	-	MW	94	6.7	1	MW	49	-	-	MW	49	-	-
MW	54	1.4	-	MW	98	9.6	-	MW	59	-	-	MW	49	-	-
MW	49	1	-	MW	95	7.2	1	MW	56	-	-	MW	46	-	-
MW	59	1.8	0	MW	106	11.3	-	MW	48	-	-	MW	48	-	-
MW	55	1.4	-	MW	92	7.5	-	MW	52	-	-	CCG	47	-	-
MW	54	1.2	-	MW	104	9.9	1	MW	50	-	-	CCG	81	[illegible]	-
MW	49	1.2	-	MW	87	6.5	-	MW	54	-	-	CCG	75	4.9	-
MW	56	1.5	-	MW	95	6.4	1	MW	54	-	-	CCG	81	[illegible]	-
MW	55	1.5	-	MW	99	7	-	MW	51	-	-	CCG	77	4.1	-
MW	42	0.7	0	MW	95	7.6	1	MW	52	-	-	CCG	[illegible]	4.1	-
MW	57	1.7	-	MW	102	9.8	-	MW	49	-	-	CCG	[illegible]	[illegible]	-
MW	55	1.5	0	MW	55	7.8	-	MW	59	-	-	CCG	[illegible]	3.1	-
MW	54	1.3	0	MW	97	8.7	1	MW	46	-	-	DV	[illegible]	-	-
MW	51	1.2	0	MW	92	8.1	-	MW	59	-	-	DV	126	[illegible]	2
MW	50	1.3	-	MW	85	6.3	-	MW	42	-	-	DV	187	[illegible]	2
MW	105	10.3	-	MW	89	6.8	1	MW	41	-	-	RB	[illegible]	[illegible]	1
MW	101	8.8	1	MW	93	6.8	-	MW	48	-	-				
MW	91	7.1	-	MW	107	11.9	-	MW	51	-	-				
MW	103	9.2	0	MW	92	7.8	-	MW	55	-	-				
MW	95	9.3	-	MW	95	7.9	-	MW	59	-	-				

ELECTROFISHING DATA

SYSTEM: BLACKWATER DATE: 90/09/05 WATER TEMP.: 13.0
REACH#: 2 SURFACE AREA: 300 sq.m. MAP#: 93-0/12
LOCATION; 1.2 km. downstream of Finlay F.S.R. bridge crossing. (Quadlivichee property)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	-	-	-												
CC	-	-	-												
CC	-	-	-												
CC	-	-	-												
CC	-	-	-												
CC	-	-	-												
CC	-	-	-												
CC	-	-	-												
CC	-	-	-												
CC	-	-	-												
CC	-	-	-												
[illegible]	-	-	-												

*Note: No weights or lengths were taken.

ELECTROFISHING DATA

SYSTEM: BLACKWATER DATE: 90/09/07 WATER TEMP.: 10.0 C.

REACH#: TRIB 1 SURFACE AREA: 160 sq.m. MAP#: 93 0/12

LOCATION: 25 m. DOWNSTREAM OF BRIDGE CROSSING ON 14000 ROAD AT 4.6 km. POINT. (U.T.M. 10.4566.61531)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
RB	38	0.7	0+	CC	72	4	-								
RB	42	0.7	0+	CC	36	0.6	-								
RB	44	0.9	0+	CC	40	0.6	-								
RB	48	1.3	0+	CC	48	1.1	-								
RB	99	10.3	1+	DV	115	5.6	1+								
RB	105	12	1+	DV	142	14.5	1+								
RB	92	10	1+												
RB	82	6.1	1+												
RB	101	13	1+												
RB	139	32.2	2+												
RB	147	41.3	2+												
RB	53	1.7	0+												
RB	79	6.1	1+												
RB	105	14	1+												
BB	185	32.6	-												
BB	195	35.5	-												
BB	165	28.3	-												
BB	191	36	-												
BB	125	41	-												
CC	70	3.9	-												

ELECTROFISHING DATA

SYSTEM: BLACKWATER DATE: 90/09/06 WATER TEMP.: 10.0 C.
REACH#: TRIB 2 SURFACE AREA: 296 sq.m. MAP#: 93 0/12
LOCATION: 25 m. DOWNSTREAM FROM FSR ROAD CROSSING, NORTH OF 14000 ROAD. (U.T.M. 10.4556.61564)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	85	5.8	-												
CC	55	2.1	-												
CC	70	3.6	-												
CC	80	4.7	-												
CC	55	1.8	-												
CC	41	1	-												
CC	80	5.8	-												
CC	53	1.4	-												
CC	80	4.7	-												
CC	55	1.8	-												
CC	30	0.5	-												
CC	32	0.4	-												
CC	35	0.6	-												
RB	45	0.9	0+												
RB	35	0.6	0+												
RB	115	13.2	1+												
RB	82	6.5	1+												
RB	130	24.7	1+												
RB	135	36.7	1+												
SB	165	28.2	-												

ELECTROFISHING DATA

SYSTEM: BLACKWATER DATE: 90/09/06 WATER TEMP.: 10.0 C.
REACH#: TRIB 2 SURFACE AREA: 120 sq.m. MAP#: 93 0/12
LOCATION: 25 m. UPSTREAM FROM FSR ROAD CROSSING, NORTH OF 14000 ROAD. (U.T.M. 10.4555.61564)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	74	3	-	CC	36	0.6	-								
CC	64	4.7	-	CC	30	0.3	-								
CC	47	1	-	RB	30	0.3	0+								
CC	45	0.9	-	RB	34	0.5	0+								
CC	48	1.2	-	RB	40	0.8	0+								
CC	69	3.5	-	RB	33	0.5	0+								
CC	51	1.6	-	RB	33	0.3	0+								
CC	32	0.4	-	RB	37	0.8	0+								
CC	55	1.9	-	RB	160	51.7	3+								
CC	65	2.3	-	RB	116	17.9	1+								
CC	84	6.5	-	RB	151	34.7	2+								
CC	37	0.6	-	RB	145	38.9	1+								
CC	35	0.6	-	RB	35	0.5	0+								
CC	36	0.6	-	DV	140	28.8	2+								
CC	67	2.8	-												
CC	65	2.8	-												
CC	50	1.4	-												
CC	34	0.5	-												
CC	50	1.3	-												
CC	40	0.9	-												

ELECTROFISHING DATA

SYSTEM: BLACKWATER DATE: 90/08/31 WATER TEMP.: 9.5 C.
REACH#: TRIB 4 SURFACE AREA: 45 sq.m. MAP#: 93 0/12
LOCATION: FINLAY FSR ROAD CROSSING AT 86.8 km. (U.T.M. 10.4516.61594)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
RB	126	21.1	1+	RB	29	0.3	0+								
RB	183	62.5	2+	CC	79	6.5	-								
RB	115	16.5	1+	CC	68	5.8	-								
RB	85	6.8	1+	CC	60	2.3	-								
RB	115	15.8	1+	CC	47	1.3	-								
RB	127	22.5	1+	CC	41	0.8	-								
RB	76	5.8	1+	CC	51	1.4	-								
RB	80	6.6	1+	DV	104	10.5	1+								
RB	81	7.3	1+												
RB	58	2.2	1+												
RB	77	5.4	1+												
RB	83	5.6	1+												
RB	77	4.7	1+												
RB	33	0.3	0+												
RB	37	0.5	0+												
RB	33	0.5	0+												
RB	36	0.5	0+												
RB	33	0.3	0+												
RB	30	0.3	0+												
RB	31	0.3	0+												

ELECTROFISHING DATA

SYSTEM: BRUIN DATE: 89/08/23 WATER TEMP.: 12.0 C.
REACH#: 1 SURFACE AREA: 300 sq.m. MAP#: 94 C/9
LOCATION: 35 m. TO 110 m. DOWNSRTEAM OF BRIDGE. (U.T.M. 10.4145.62614)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
DV	64	5.3	0	CCG	52	1.7	-								
DV	89	6.2	0	CCG	40	0.6	-								
DV	200	83.3	1	CCG	40	0.4	-								
DV	181	51	1	CCG	38	0.6	-								
DV	122	16.1	1	CCG	40	0.8	-								
DV	151	34.4	1	CCG	45	1.2	-								
DV	75	3.7	0	CCG	36	0.5	-								
DV	43	0.9	0												
DV	45	0.7	0												
DV	49	0.8	0												
DV	51	1	0												
DV	53	1.4	0												
DV	44	1	0												
DV	48	1.1	0												
CCG	80	5.3	-												
CCG	75	4.7	-												
CCG	86	6.5	-												
CCG	80	4.7	-												
CCG	76	4.4	-												
CCG	64	2.5	-												

ELECTROFISHING DATA

SYSTEM: CARBON DATE: 89/07/15 WATER TEMP.: 8.0 C.

REACH#: 1, SITE 1 SURFACE AREA: 510 sq.m. MAP#: 93 0/15

LOCATION: AT FALLS POOL (U.T.M. 10. 5219.61994)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	82	6.7	-	CC	30	0.3	-	CC	64	3	-				
CC	87	7.3	-	CC	45	0.7	-	CC	67	3	-				
CC	68	3.4	-	CC	62	2	-	CC	34	0.3	-				
CC	66	2.9	-	CC	94	9.1	-	CC	29	0.2	-				
CC	73	3.6	-	CC	76	4.4	-	CC	52	1.4	-				
CC	72	2.8	-	CC	59	2	-	CC	56	1.8	-				
CC	82	5.3	-	CC	49	1.3	-	CC	40	0.4	-				
CC	65	3.2	-	CC	67	2.7	-	CC	34	0.5	-				
CC	86	6.8	-	CC	62	2.3	-	CC	35	0.4	-				
CC	71	3.6	-	CC	52	1.6	-	CC	27	0.2	-				
CC	45	0.9	-	CC	75	4.4	-	DV	238	155.9	-				
CC	88	7.9	-	CC	99	10	-	DV	219	133	-				
CC	85	6.3	-	CC	90	6.3	-	DV	218	94	-				
CC	69	2.7	-	CC	31	0.3	-	DV	161	38	-				
CC	74	4.4	-	CC	26	0.1	-	MW	276	268.9	-				
CC	70	3.6	-	CC	60	2.3	-								
CC	78	5.1	-	CC	57	2.1	-								
CC	39	7.8	-	CC	45	1.2	-								
CC	65	3.4	-	CC	79	4.2	-								
CC	68	3.4	-	CC	59	2.3	-								

ELECTROFISHING DATA

SYSTEM: CARBON DATE: 89/07/15 WATER TEMP.: 8.0 C.

REACH#: 1, SITE 2 SURFACE AREA: 600 sq.m. MAP#: 93 0/15

LOCATION: CONFLUENCE OF 11 MILE CREEK AND CARBON CREEK. (U.T.M. 10.5216.61996)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	89	7.9		DV	157	37.1									
CC	71	3.5													
CC	66	2.9													
CC	98	9.1													
CC	77	4.7													
CC	75	3.8													
CC	94	7.5													
CC	88	6.2													
CC	86	6.6													
CC	72	3.6													
CC	61	2.3													
CC	60	2.5													
CC	101	10.9													
CC	79	4.4													
CC	57	2.1													
CC	69	3													
CC	65	2.6													
CC	72	3.8													
CC	64	2.3													
CC	40	0.6													

ELECTROFISHING DATA

SYSTEM: CARBON　DATE: 89/07/18　WATER TEMP.: 10.0 C.

REACH#: 3　SURFACE AREA: 700 sq.m.　MAP#: 93 0/15

LOCATION: 60 m. DOWNSTREAM OF FOOT BRIDGE TO 110 m. UPSTREAM OF FOOT BRIDGE (U.T.M. 10.5222.61961)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	62	2.3	-												
CC	77	4.5	-												
CC	93	8.5	-												
CC	70	3.1	-												
CC	62	2.5													
CC	71	3.7	-												
CC	80	6	-												
CC	78	5.7	-												
CC	79	5.3	-												
CC	62	2.1	-												
CC	108	14	-												
CC	53	1.6	-												
CC	76	4.9	-												
CC	57	1.5	-												
CC	51	1.2	-												
CC	59	1.9	-												
CC	63	2.2	-												
CC	81	5.3	-												
DV	158	42.8	-												
DV	104	11.1	-												

ELECTROFISHING DATA

SYSTEM: CARBON　DATE: 89/07/18　WATER TEMP.: 10.0 C.

REACH#: 4　SURFACE AREA: 390 sq.m.　MAP#: 93 0/15

LOCATION: (U.T.M. 10.5232.61886)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	49	1.3	-												
CC	25	0.2	-												
CC	22	0.1	-												

ELECTROFISHING DATA

SYSTEM: CARBON DATE: 90/08/14 WATER TEMP.: 10.5 C.

REACH#: 3 SURFACE AREA: 3600 sq.m.

At foot bridge (middle of reach #3)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
RB	147	30.9		CC	94	-	-								
RB	138	28.8		CC	71	-	-								
RB	122	20.8		CC	110	-	-								
RB	140	27		CC	86	-	-								
RB	135	26.5		CC	87	-	-								
RB	147	36.6		CC	104	-	-								
RB	113	17.4		CC	100	-	-								
RB	130	22.4		CC	87	-	-								
RB	156	43.2		CC	83	-	-								
RB	154	34.5		CC	82	-	-								
RB	136	23.5		CC	75	-	-								
RB	139	26.9		CC	54	-	-								
RB	134	23.8		CC	39	-	-								
RB	142	32.2													
RB	147	27													
RB	151	31.1													
RB	145	36.7													
RB	141	29.4													
RB	130	24.1													
CC	107	-	-												

NOTE- ALL RB ARE HATCHERY FISH RELEASED JULY 18, 1990.

ELECTROFISHING DATA

SYSTEM: CARBON DATE: 91/08/21 WATER TEMP.: 9.0 C.

REACH#: 3 SURFACE AREA: 1,200 sq.m.

At foot bridge (middle of reach 3)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
RB	158	42.6													
RB	153	36.6													
RB	159	33.9													
RB	155	45.4													
RB	155	43.8													
RB	120	19.3													
RB	145	36.7													
RB	143	33.4													
RB	165	52.2													
DV	170	50.7	2												
DV	179	51.9	2												
DV	160	41.1	2												
DV	180	61.6	2												

NOTE- ALL RB ARE HATCHERY FISH.

ELECTROFISHING DATA

SYSTEM: CARBON DATE: 90/09/12 WATER TEMP.: N/A
REACH#: 3 SURFACE AREA: 280 sq. m.
LOCATION: RELEASE SITE 1 ...AT BURNS ROAD BRIDGE (BOTTOM OF REACH 3)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
RB	146	34.7	-												
RB	174	57.1	-												
RB	112	16.2	-												
RB	161	47.2	-												
RB	138	27.5	-												
RB	133	27.8	-												
RB	174	51.9	-												
RB	138	29.6	-												
RB	156	39.3	-												
RB	153	40	-												
RB	173	63.2	-												
RB	122	19.2	-												
RB	166	44.9	-												
RB	160	36.8	-												
RB	133	26.1	-												
RB	120	20.6	-												
RB	145	32.8	-												
RB	140	29.6	-												
RB	160	39.8	-												
DV	132	24.1	-												

ELECTROFISHING DATA

SYSTEM: CARBON DATE: 91/07/19 WATER TEMP.: N/A
REACH#: SIDE CHANNEL SURFACE AREA: 188 sq.m.

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
DV	125	25.6	-												
DV	100	10.7	-												
CC	60	-	-												

ELECTROFISHING DATA

SYSTEM: CARBON DATE: 91/08/22 WATER TEMP.: 8.0 C.
REACH#: SIDE CHANNEL SURFACE AREA: 188 sq. m.
LOCATION:

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
RB	134	27	-	RB	140	33.7	-								
RB	139	27.5	-	RB	140	32.6	-								
RB	135	25.9	-	RB	112	16.5	-								
RB	140	27.5	-	RB	175	60.8	-								
RB	152	35.6	-	RB	188	79.1	-								
RB	160	46.7	-	RB	93	9.3	-								
RB	153	40.5	-	RB	150	36.2	-								
RB	189	97	-	RB	165	44	-								
RB	140	34.2	-	RB	153	35.5	-								
RB	139	29.2	-	RB	148	35.6	-								
RB	152	34.7	-	RB	153	39.9	-								
RB	173	62	-	RB	150	34.5	-								
RB	162	51.6	-												
RB	156	36.2	-												
RB	162	50.9	-												
RB	158	38.8	-												
RB	167	49	-												
RB	140	30.6	-												
RB	159	43.9	-												
DV	146	33.9	-												

ELECTROFISHING DATA

SYSTEM: CARBON (MCALLISTER) DATE: 89/07/18 WATER TEMP.: 11.0 C.
REACH#: 1 SURFACE AREA: 200 sq.m. MAP#: 93 0/15
LOCATION: 150 m. DOWNSTREAM FROM BRIDGE CROSSING. (U.T.M. 10.5245.61911)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
DV	157	45	-												

ELECTROFISHING DATA

SYSTEM: CHICHOUYENILY DATE: 90/08/23 WATER TEMP.: 10.0 C.
REACH#: 1, SITE 1 SURFACE AREA: 760 sq.m. MAP#: 93 0/6
LOCATION: FROM LOWEST BRIDGE CROSSING TO 75 m. UPSTREAM. (U.T.M. 10.4921.61294)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	74	-	-	CC	59	-	-	CC	40	-	-				
CC	64	-	-	CC	75	-	-	CC	38	-	-				
CC	74	-	-	CC	53	-	-	CC	43	-	-				
CC	69	-	-	CC	53	-	-	RB	122	18.7	2+				
CC	79	-	-	CC	48	-	-	RB	162	56.6	2+				
CC	68	-	-	CC	54	-	-	RB	97	11	1+				
CC	73	-	-	CC	38	-	-	RB	101	12.3	1+				
CC	77	-	-	CC	44	-	-	RB	133	29.7	2+				
CC	84	-	-	CC	40	-	-	RB	147	34.5	1+				
CC	56	-	-	CC	47	-	-	RB	138	35.6	2+				
CC	86	-	-	CC	42	-	-	DV	273	181.4	3+				
CC	72	-	-	CC	39	-	-	DV	228	122.1	3+				
CC	66	-	-	CC	39	-	-								
CC	69	-	-	CC	42	-	-								
CC	67	-	-	CC	43	-	-								
CC	45	-	-	CC	41	-	-								
CC	70	-	-	CC	38	-	-								
CC	71	-	-	CC	42	-	-								
CC	57	-	-	CC	42	-	-								
CC	61	-	-	CC	36	-	-								

ELECTROFISHING DATA

SYSTEM: CHOWIKA DATE: 89/08/26 WATER TEMP.: 8.0 C.
REACH#: 1, SITE 1 SURFACE AREA: 190 sq.m. MAP#: 94 C/10
LOCATION: FROM 30 m. TO 105 m. UPSTREAM OF BRIDGE CROSSING. (U.T.M. 10.3945.62900)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
DV	75	4.5	0	DV	39	0.6	0								
DV	68	2.8	0	CCG	99	12.2	-								
DV	69	3.2	0	CCG	54	1.6	-								
DV	44	0.7	0	CCG	40	0.6	-								
DV	43	0.7	0	CCG	40	0.7	-								
DV	40	0.6	0	CCG	40	0.6	-								
DV	45	0.8	0												
DV	47	1	0												
DV	47	0.9	0												
DV	44	0.8	0												
DV	43	0.7	0												
DV	43	0.7	0												
DV	35	0.4	0												
DV	40	0.6	0												
DV	38	0.5	0												
DV	43	0.7	0												
DV	40	0.5	0												
DV	49	0.9	0												
DV	40	0.6	0												
DV	45	0.7	0												

ELECTROFISHING DATA

SYSTEM: CLEARWATER DATE: 89/09/27 WATER TEMP.: 7.0 C.
REACH#: 1, SITE 1 SURFACE AREA: 590 sq.m. MAP#: 93 O/14
LOCATION: (U.T.M. 10.4900.61930)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
DV	154	31.9	2												
DV	108	11.8	1												
DV	69	3.6	0												
DV	76	4	0												
DV	68	3.2	0												
DV	63	2.7	0												
DV	66	3.3	0												
DV	44	0.9	0												
DV	40	0.7	0												
CCG	113	17	-												
CCG	98	10.6	-												
CCG	108	11.4	-												
CCG	104	11.5	-												
CCG	74	3.9													

ELECTROFISHING DATA

SYSTEM: CLEARWATER DATE: 89/09/28 WATER TEMP.: 7.5 C.
REACH#: 2, SITE 1 SURFACE AREA: 330 sq.m. MAP#: 93 0/14
LOCATION: (U.T.M. 10.4928.61855)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
DV	75	5	0												
DV	75	5	0												
DV	87	6.2	0												
DV	75	4.6	0												
DV	112	12.7	1												
DV	125	20.7	1												
DV	76	4	0												
DV	71	4	0												
DV	64	2.4	0												
RB	49	1.2	0												
RB	86	7.5	0												
RB	97	11	0												
RB	47	1.1	0												
RB	45	1.1	0												

ELECTROFISHING DATA

SYSTEM: CLEARWATER (DUCETTE) DATE: 89/09/27 WATER TEMP.: N/A
REACH#: 1 SURFACE AREA: 525 sq.m. MAP#: 93 0/14
LOCATION: AT MOUTH OF CREEK (U.T.M. 10.4924.61991)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
DV	114	13.3	0	CCG	70	3.6	-								
DV	113	15.6	0	CCG	69	3.3	-								
DV	111	12.3	0	CCG	61	2.3	-								
DV	115	14.1	0	CCG	47	1.2	-								
DV	102	9.8	0	RB	102	10.6	0								
DV	103	11.6	0												
DV	104	9.6	0												
DV	84	7	0												
DV	88	6.4	0												
DV	174	45.5	2												
DV	194	61.2	2												
DV	85	5.1	0												
DV	66	3.3	0												
CCG	85	6.6	-												
CCG	72	4.1	-												
CCG	88	7.5	-												
CCG	79	5.1	-												
CCG	77	4.1	-												
CCG	72	4.1	-												
CCG	72	3.9	-												

ELECTROFISHING DATA

SYSTEM: CLEARWATER (MACOUN) DATE: 89/09/28 WATER TEMP.: 7.5 C.
REACH#: 1 SURFACE AREA: 350 sq.m. MAP#: 93 0/14
LOCATIO : AT BRIDGE CROSSING (U.T.M. 10.4927.61852)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
DV	56	2.1	0												
DV	65	2.9	0												
DV	77	5.4	0												
DV	95	8.4	0												
DV	98	9.6	-												
DV	56	1.8	0												
DV	88	6.8	0												
DV	90	7.1	-												
RB	37	0.6	0												
RB	34	0.4	0												
RB	34	0.4	0												
RB	32	0.3	0												
RB	36	0.4	0												
RB	32	0.4	0												

ELECTROFISHING DATA

SYSTEM: CLEARWATER (TRIB) DATE: 89/09/28 WATER TEMP.: 6.5 C.
REACH#: 1 SURFACE AREA: 200 sq.m. MAP#: 93 0/14
LOCATION: FROM CONFLUENCE WITH CLEARWATER, TO 75 m. UPSTREAM. (U.T.M. 10.4900.61902)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
DV	126	23.4	1												
DV	55	1.6	0												
DV	51	1.4	0												
DV	55	1.6	0												
DV	44	1.1	0												
DV	57	1.7	0												
DV	53	1.8	0												
DV	54	1.8	0												
DV	49	1.4	0												
DV	53	1.4	0												
DV	51	1.2	0												
GR	56	1.6	-												

ELECTROFISHING DATA

SYSTEM: COLLINS DATE: 89/08/23 WATER TEMP.: 9.5 C.
REACH#: 1 SURFACE AREA: 300 sq.m. MAP#: 94 C/8
LOCATION: FROM 25 m. TO 75 m. UPSTREAM OF BRIDGE. (U.T.M. 10.4152.62564)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CCG	105	13.5	-												
CCG	105	12.5	-												
CCG	96	10.1	-												
CCG	104	12.6	-												
CCG	47	1	-												
DV	99	10.5	1												
DV	96	9.6	1												
DV	44	1	0												
DV	50	1.5	0												
MW	210	114.4	3												
MW	215	142.5	3												
MW	232	151.7	3												

ELECTROFISHING DATA

SYSTEM: CUT THUMB DATE: 90/09/26 WATER TEMP.: 7.5 C.
REACH#: 1 SURFACE AREA: 600 sq.m. MAP#: 93 0/11
LOCATION: 50 m. UPSTREAM OF BRIDGE CROSSING. (U.T.M. 10.4806.61553)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
RB	128	24.9	1+	RB	45	1.1	0+	CCG	43	-	-				
RB	111	16.1	1+	RB	36	0.6	0+	CCG	45	-	-				
RB	103	13	1+	RB	48	1.2	0+	DV	188	67.3	2+				
RB	50	1.7	0+	RB	49	1.3	0+	DV	154	41	2+				
RB	46	1.2	0+	CCG	95	-	-	DV	154	37.4	2+				
RB	53	2	0+	CCG	55	-	-								
RB	53	1.6	0+	CCG	69	-	-								
RB	55	2.2	0+	CCG	86	-	-								
RB	49	1.5	0+	CCG	59	-	-								
RB	51	1.6	0+	CCG	71	-	-								
RB	49	1.1	0+	CCG	63	-	-								
RB	46	1	0+	CCG	53	-	-								
RB	49	0.7	0+	CCG	57	-	-								
RB	50	1.5	0+	CCG	49	-	-								
RB	50	1.5	0+	CCG	43	-	-								
RB	49	1.5	0+	CCG	53	-	-								
RB	49	1.3	0+	CCG	54	-	-								
RB	38	1.2	0+	CCG	53	-	-								
RB	50	1.6	0+	CCG	44	-	-								
RB	48	1.4	0+	CCG	46	-	-								

ELECTROFISHING DATA

SYSTEM: DAVIS DATE: 89/08/26 WATER TEMP.: 10.5 C.
REACH#: 1 SURFACE AREA: 300 sq.m. MAP#: 94 C/9
LOCATION: FROM 100 m. TO 175 m. DOWNSTREAM OF BRIDGE. (U.T.M. 10.4095.62679)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
DV	55	1.7	0	DV	56	1.7	0								
DV	50	1.2	0	DV	55	1.7	0								
DV	90	6.3	1	DV	48	0.9	0								
DV	57	1.5	0	DV	43	0.7	0								
DV	52	1.2	0	DV	51	1.3	0								
DV	51	1.1	0	DV	49	1	0								
DV	52	1.3	0	DV	54	1.1	0								
DV	46	0.7	0	LSU	49	1.1	-								
DV	45	0.7	0	LSU	52	1.4	-								
DV	53	1.2	0	LSU	49	1.1	-								
DV	53	1	0	LSU	41	0.9	-								
DV	51	1.3	0	CCG	82	5.9	-								
DV	46	0.9	0	CCG	45	0.9	-								
DV	52	1.2	0	CCG	23	0.1	-								
DV	55	1.6	0												
DV	49	1.1	0												
DV	53	1.1	0												
DV	54	1.3	0												
DV	50	0.8	0												
DV	50	1.2	0												

ELECTROFISHING DATA

SYSTEM: DRESSER DATE: 89/07/13 WATER TEMP.: 11.5 C.
REACH#: 1, SITE 1 SURFACE AREA: 320 sq.m. MAP#: 94 B/1
LOCATION: FROM CONFLUENCE WITH DUNLEVY TO 40 m. UP DRESSER. (U.T.M. 10. 5375.62276)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	78	4.2	-	CC	42	0.7	-	CC	52	1.1	-	DV	205	77	
CC	72	3.2	-	CC	76	4.3	-	CC	44	0.9	-	Mw	219	123.7	3
CC	71	3.7	-	CC	71	3.6	-	RB	151	43.3	-	Mw	257	186.4	[illegible]
CC	58	2.1	-	CC	50	1.3	-	RB	138	33.4	-				
CC	55	1.7	-	CC	61	2.2	-	RB	86	5.6	-				
CC	77	5	-	CC	38	0.5	-	RB	85	5.4	-				
CC	68	3	-	CC	55	1.7	-	RB	81	5.3	-				
CC	42	0.7	-	CC	60	2.1	-	RB	83	5.8	-				
CC	41	0.7	-	CC	59	2	-	RB	76	4.3	-				
CC	62	2.4	-	CC	45	1	-	RB	90	7.8	-				
CC	81	4.8	-	CC	67	3	-	RB	73	4.3	-				
CC	64	2.6	-	CC	94	8.2	-	RB	81	5.7	-				
CC	40	0.6	-	CC	43	0.8	-	RB	75	4.6	-				
CC	61	2	-	CC	72	3.6	-	RB	72	3.7	-				
CC	67	3.1	-	CC	66	2.6	-	RB	70	3.5	-				
CC	47	1	-	CC	69	2.6	-	RB	66	3	-				
CC	70	3.5	-	CC	66	4	-	RB	80	5.3	-				
CC	57	1.6	-	CC	78	1	-	RB	72	3.3	-				
CC	41	0.6	-	CC	47	3.1	-	RB	73	5.2	-				
CC	42	0.8	-	CC	68	1.1	-	DV	241	125.6	-				

ELECTROFISHING DATA

SYSTEM: DRESSER DATE: 89/07/19 WATER TEMP.: 11.5 C.
REACH#: 2 SURFACE AREA: 560 sq.m. MAP#: 94 B/1
LOCATION: ABOVE BEAVER DAM. (U.T.M. 10.5387.62296)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CCG	92	8.4	-	CCG	58	2.2	-								
CCG	75	4.1	-	CCG	67	3	-								
CCG	102	9.3	-	CCG	77	3.7	-								
CCG	79	4.8	-	CCG	73	3.6	-								
CCG	99	7.9	-	CCG	62	3.1	-								
CCG	88	6.4	-	CCG	45	0.9	-								
CCG	81	5.1	-	RB	89	8.7	-								
CCG	69	3.6	-	RB	70	4.7	-								
CCG	83	5.7	-	RB	78	5.7	-								
CCG	85	6.2	-	RB	71	4.6	-								
CCG	69	3.7	-	RB	78	6.1	-								
CCG	73	3.6	-	RB	75	5.4	-								
CCG	74	3.5	-	RB	92	8.4	-								
CCG	70	3.6	-												
CCG	64	2.9	-												
CCG	64	2.7	-												
CCG	77	4.5	-												
CCG	63	2.4	-												
CCG	68	3.8	-												
CCG	57	1.4	-												

ELECTROFISHING DATA

SYSTEM: DUNLEVY DATE: 89/07/13 WATER TEMP.: 10.0 C.
REACH#: 1 SURFACE AREA: 1,000 sq.m. MAP#: 94 B/1
LOCATION: IMMEDIATELY UPSTREAM OF FENCE LOCATION. (U.T.M. 10.5384.62253)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	99	10.6	-	CC	85	5.9	-	CC	46	1	-	CC	69	3.4	
CC	85	5.8	-	CC	80	5.4	-	CC	63	2.3	-	CC	71	3.6	-
CC	91	7.8	-	CC	87	7.2	-	CC	87	6.4	-	CC	94	7.8	-
CC	90	8.1	-	CC	80	5.6	-	CC	73	3.2	-	CC	66	3.8	-
CC	79	5.6	-	CC	87	7.9	-	CC	78	5	-	CC	100	10.9	-
CC	46	0.8	-	CC	88	7.1	-	CC	87	6.6	-	MW	266	230	4
CC	60	2.2	-	CC	93	8.9	-	CC	86	7.3	-	MW	237	190	4
CC	77	4.5	-	CC	92	7.9	-	CC	84	6.5	-	MW	235	180	4
CC	50	1.2	-	CC	49	1.1	-	CC	45	0.7	-	MW	311	310	6
CC	87	6	-	CC	45	0.9	-	CC	46	1.1	-	MW	250	200	4
CC	71	3.2	-	CC	45	1	-	CC	45	0.9	-	MW	220	160	3
CC	69	3.6	-	CC	49	1.3	-	CC	67	3.4	-	MW	252	210	5
CC	76	4.4	-	CC	75	4.1	-	CC	53	1.2	-	MW	224	160	4
CC	103	10.3	-	CC	75	4.4	-	CC	86	7.4	-	MW	237	160	4
CC	92	7.6	-	CC	66	3.7	-	CC	66	2.7	-	MW	166	49.8	2
CC	84	6.4	-	CC	47	1.3	-	CC	43	0.6	-	MW	135	26.6	2
CC	68	3.3	-	CC	66	2.8	-	CC	41	0.7	-	MW	288	25	5
CC	73	3.9	-	CC	85	6.1	-	CC	41	0.8	-	RB	168	52.5	-
CC	73	4	-	CC	116	13.5	-	CC	36	0.5	-	RB	150	39.5	-
CC	42	0.7	-	CC	65	3.1	-	CC	45	0.8	-	RB	93	9.2	-
CC	82	5.1	-	CC	48	1.2	-	CC	42	0.7	-	RB	77	5.4	-
CC	86	6.8	-	CC	91	7.8	-	CC	88	6.7	-	RB	70	3.9	-
CC	78	4.7	-	CC	70	3.1	-	CC	71	4	-	DV	248	147.2	-
CC	67	3.4	-	CC	81	5.6	-	CC	93	7.3	-				

ELECTROFISHING DATA

SYSTEM: DUNLEVY CREEK DATE: 90/08/16 WATER TEMP.: 15.0 C.

REACH#: 1 SURFACE AREA: 455 sq. m.

LOCATION: 90 m. DOWNSTREAM FROM CONFL. OF DRESSER, UPSTREAM TO CONFLUENCE WITH DRESSER. (U.T.M. 10.5376.62275)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	90	-	-	CC	47	-	-	CC	48	-	-	RB*	106	10.7	1
CC	90	-	-	CC	74	-	-	CC	44	-	-	RB*	100.3	9.6	1
CC	68	-	-	CC	74	-	-	CC	40	-	-	RB*	110.2	16.3	1
CC	71	-	-	CC	42	-	-	RB*	140.1	35.8	1	RB*	130.8	26	1
CC	47	-	-	CC	45	-	-	RB*	143.2	30.5	1	RB*	110.5	11.4	1
CC	60	-	-	CC	61	-	-	RB*	120	16.3	1	RB*	140.5	32.1	1
CC	72	-	-	CC	59	-	-	RB*	105	12.4	1	RB	100.2	13.3	1
CC	65	-	-	CC	41	-	-	RB*	100	8.4	1	RB	90.5	7.2	1
CC	64	-	-	CC	58	-	-	RB*	130	23.4	1	RB	81	5.1	1
CC	61	-	-	CC	82	-	-	RB*	164	44.1	1	RB	36	0.4	0
CC	60	-	-	CC	71	-	-	RB*	155	25.4	1	RB	34	0.4	0
CC	61	-	-	CC	54	-	-	RB*	104.4	29.8	1	RB	38	0.4	0
CC	50	-	-	CC	58	-	-	RB*	155	31.8	1	RB	34	0.4	0
CC	47	-	-	CC	54	-	-	RB*	155.8	37.4	1	RB	38	0.4	0
CC	61	-	-	CC	48	-	-	RB*	101.5	14.3	1	RB	33	0.2	0
CC	71	-	-	CC	40	-	-	RB*	130	24.3	1	RB	32	0.1	0
CC	71	-	-	CC	53	-	-	RB*	122.4	17.5	1	RB	36	0.5	0
CC	60	-	-	CC	58	-	-	RB*	142	28.1	1	RB	32	0.2	0
CC	44	-	-	CC	61	-	-	RB*	110.9	16.7	1	RB	36	0.4	0
CC	67	-	-	CC	48	-	-	RB*	140.7	29	1	MW	130.3	22.3	1
CC	45	-	-	CC	46	-	-	RB*	100.6	11.3	1				

RB* - denotes hatchery fish released July 18, 1990.

ELECTROFISHING DATA

SYSTEM: DUNLEVY CREEK DATE: 90/08/16 WATER TEMP.: 17.0C.

REACH#: 1 SURFACE AREA: 210 sq. m.

LOCATION: Between two beaver dams. (U.T.M. 10.53739.622945)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
RB*	110.4	13.6	1	RB*	150.6	35.5	1	CC	85	-	-	RB	110	14.9	1
RB*	148	30	1	RB*	107	14.5	1	CC	47	-	-	RB	96	7.4	1
RB*	120	17	1	RB*	100.6	14.2	1	CC	49	-	-	RB	108	13	1
RB*	100.8	13.1	1	RB*	150	31.4	1	CC	32	-	-	RB	172	57	2
RB*	140	27.8	1	RB*	123	17.5	1	CC	70	-	-	RB	88	7.1	1
RB*	110.4	15.4	1	RB*	133	21.5	1	CC	67	-	-	RB	33	-	0
RB*	145	33.1	1	RB*	112	12.8	1	CC	59	-	-	RB	33	-	0
RB*	166	45.5	1	RB*	122	19.2	1	CC	71	-	-	RB	33	-	0
RB*	108	9.8	1	RB*	121	16.2	1	CC	55	-	-	RB	39	-	0
RB*	107	14.6	1	RB*	118	14	1	CC	45	-	-	RB	28	-	0
RB*	92	9	1	RB*	127	21.4	1	CC	57	-	-	RB	33	-	0
RB*	109	11.4	1	RB*	124	18.6	1	CC	42	-	-	RB	41	-	0
RB*	90	8.1	1	RB*	110	14.6	1	CC	78	-	-	RB	31	-	0
RB*	93	9.3	1	CC	90	-	-	CC	48	-	-	RB	30	-	0
RB*	133	25.5	1	CC	90	-	-	CC	45	-	-	RB	34	-	0
RB*	96	7.6	1	CC	78	-	-	CC	44	-	-	RB	39	-	0
RB*	140.3	29.5	1	CC	66	-	-	CC	41	-	-	RB	31	-	0
RB*	133.5	25.5	1	CC	64	-	-	RB	104	11.7	1	MW	199	86.2	2
RB*	120.8	17.9	1	CC	91	-	-	RB	98	10.5	1	MW	141	30.3	2
RB*	87	6.7	1	CC	63	-	-	RB	141	31	1				
RB*	140.5	33.3	1	CC	63	-	-	RB	107	12.1	1				

ELECTROFISHING DATA

SYSTEM: DUNLEVY CREEK DATE: 910721 WATER TEMP.: 12.0 C.
REACH#: 1 SURFACE AREA: 455 sq. m.
LOCATION: 90 m. below Dresser confl. Site 1 (U.T.M. 10.5376.62275)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
RB	92	9.3	-												
RB	81	7	-												
RB	90	9.8	-												
RB	136	29.4	-												
RB	155	47.8	-												
RB*	133	30.3	-												
RB*	170	55.1	-												
MW	240	156.9	-												
MW	165	-	-												
MW	240	178.2	-												
MW	250	202.8	-												
MW	209	118.4	-												
DV	315	-	-												
DV	235	133.7	-												

RB* - denotes hatchery fish

ELECTROFISHING DATA

SYSTEM: DUNLEVY CREEK DATE: 910824 WATER TEMP.: 11.0 C.
REACH#: 1 SURFACE AREA: 455 sq. m.
LOCATION: 90 m. below Dresser confl. Site 1 (U.T.M. 10.5376.62275)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
RB	100	11.2	-	RB	43	0.9	0								
RB	94	8.4	-	RB	94	8.8	-								
RB	102	13.1	-	RB	43	0.9	0								
RB	108	12.8	-	RB	86	7.5	-								
RB	141	31.1	-	RB*	123	22	-								
RB	102	10.7	-	RB*	125	17.7	-								
RB	120	22.7	-	RB*	130	19.8	-								
RB	89	6.7	-	DV	212	92.3	-								
RB	100	10.8	-	DV	236	126	-								
RB	118	17.6	-	DV	302	200	-								
RB	91	9	-	MW	177	68.8	-								
RB	109	16.3	-	MW	75	3.8	-								
RB	129	23.1	-												
RB	97	9.8	-												
RB	88	7.3	-												
RB	48	1.3	0												
RB	42	1.2	0												
RB	43	0.9	0												
RB	38	0.5	0												
RB	74	5	-												

RB* - denotes hatchery fish

ELECTROFISHING DATA

SYSTEM: DUNLEVY CREEK DATE: 91/07/21 WATER TEMP.: 15.0 C.
REACH#: 1 SURFACE AREA: 1,500 sq. m.
LOCATION: Site 3, approx. 0.9 km. below Dresser confluence. (U.T.M. 10.5375.62276)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
RB	165	57.7	-	RB*	140	31.8	1								
RB	130	30.4	-	RB*	200	106.1	-								
RB	130	23.6	-												
RB	83	6.4	-												
RB	99	10.5	-												
RB	102	13.6	-												
RB	78	5.8	-												
RB	80	6.5	-												
RB	100	10.9	-												
RB	182	85	-												
RB	143	38.2	-												
RB	74	5	-												
RB	130	29.7	-												
MW	273	176.8	-												
MW	240	168.5	-												
MW	215	122.6	-												
MW	245	174.3	-												
MW	239	140.3	-												
MW	209	117.2	-												
MW	235	148.9	-												

RB* - denotes hatchery fish.

ELECTROFISHING DATA

SYSTEM: DUNLEVY CREEK DATE: 910721 WATER TEMP.: 12.0 C.
REACH#: 1 SURFACE AREA: 997.5 sq. m.
LOCATION: Between two beaver dams. Site 2 (U.T.M. 10.53739.622945)
started 150 m. lower than in 1990, hence the larger surface area shocked.

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
RB	95	9.4	-	RB	95	10.5	-								
RB	89	8.2	-	RB	90	8.5	-								
RB	121	17.9	-	RB	126	21.7	-								
RB	80	6.5	-	RB	126	26	-								
RB	89	7.7	-	RB	88	7.9	-								
RB	84	6.5	-	RB*	155	42.3	-								
RB	83	8.1	-	RB*	120	16.7	-								
RB	80	6.6	-	RB*	167	59.3	-								
RB	89	9.4	-	RB*	162	49.9	-								
RB	83	7.1	-	RB*	139	30.1	-								
RB	81	6.1	-	RB*	145	41	-								
RB	80	5.5	-	RB*	142	37.4	-								
RB	95	10.3	-	RB*	140	29.6	-								
RB	81	7.5	-	RB*	149	36.2	-								
RB	87	8.1	-	RB*	148	31	-								
RB	95	11.3	-	RB*	145	37.2	-								
RB	75	5.3	-												
RB	103	15.2	-												
RB	113	18.6	-												
RB	84	7.2	-												

RB* - denotes hatchery fish ...released 1990. Rainbow trout restocked here July 22, 1991.

ELECTROFISHING DATA

SYSTEM: DUNLEVY CREEK DATE: 91/08/24 WATER TEMP.: 11.0 C.
REACH#: 1 SURFACE AREA: 735 sq. m.
LOCATION: Between two beaver dams. Site 2. (U.T.M. 10.53739.622945)
started 100 m. lower than in 1990, hence the larger surface area shocked.

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
RB*	150	32.8	-	RB*	196	87.2	-	RB*	189	63.9	-	RB	86	6.3	-
RB*	128	18.7	-	RB*	177	59.1	-	RB*	165	47.1	-	RB	94	8.6	-
RB*	143	31.3	-	RB*	140	25.9	-	RB*	170	49.8	-	RB	98	9.7	-
RB*	153	31.5	-	RB*	134	18.5	-	RB*	142	24.2	-	RB	95	9.2	-
RB*	178	52.9	-	RB*	150	40.4	-	RB*	162	48.7	-	RB	80	6	-
RB*	158	36.4	-	RB*	122	16.1	-	RB*	151	37.1	-	RB	101	11.7	-
RB*	145	27.6	-	RB*	131	19.5	-	RB*	149	37.8	-	RB	73	4.8	-
RB*	134	23.3	-	RB*	171	48.3	-	RB*	132	20.8	-	RB	78	5.7	-
RB*	143	28.3	-	RB*	139	23.8	-	RB*	115	14.2	-	RB	108	15.3	-
RB*	125	17.4	-	RB*	146	29	-	RB*	152	31.1	-	RB	110	13.6	-
RB*	135	23	-	RB*	127	18.1	-	RB*	177	50.7	-	RB	102	11	-
RB*	133	22.3	-	RB*	130	20.5	-	RB*	142	23.6	-	RB	40	0.7	0
RB*	146	28.2	-	RB*	131	19.6	-	RB*	134	21.7	-	RB	79	6.2	-
RB*	153	38.4	-	RB*	135	23.2	-	RB*	183	61.3	-	RB	88	6.9	-
RB*	101	9.4	-	RB*	148	29.1	-	RB*	158	39	-	RB	93	7.8	-
RB*	160	42.6	-	RB*	150	30.7	-	RB*	176	58	-	RB	96	9.1	-
RB*	161	87.9	-	RB*	178	57.9	-	RB*	137	22.1	-	RB	84	6.6	-
RB*	137	22.5	-	RB*	130	21.3	-	RB*	153	33.2	-	RB	85	7.6	-
RB*	165	43.6	-	RB*	145	29	-	RB*	162	39.4	-	RB	83	5.8	-
RB*	130	22	-	RB*	148	29.9	-	RB*	138	23	-	RB	88	8.3	-
RB*	140	34.5	-	RB*	142	28.7	-	RB*	140	26.5	-	RB	92	8.4	-
RB*	167	41.9	-	RB*	146	27.9	-	RB*	132		-	RB	107	11.4	-
RB*	158	37.1	-	RB*	119	16.3	-	RB*	134	20.7	-	RB	74	4.6	-
RB*	135	24.4	-	RB*	143	30.7	-	RB*	176	46.7	-	RB	107	11.6	-
RB*	150	31.3	-	RB*	127	20.8	-	RB*	132	19.9	-	RB	106	14.1	-
RB*	122	16	-	RB*	147	26.4	-	RB*	183	60.6	-	RB	41	0.9	0
RB*	158	44	-	RB*	134	24.1	-	RB*	172	49.7	-	RB	47	1.4	0
RB*	163	39.8	-	RB*	152	33.4	-	RB*	171	53.2	-	RB	96	8.7	-
RB*	178	57.7	-	RB*	158	35.4	-	RB*	123	17.6	-	RB	105	10.6	-

RB* - denotes hatchery rainbow...likely from the July 1991 liberations.

ELECTROFISHING DATA

SYSTEM: DUNLEVY DATE: 89/07/16 WATER TEMP.: 14.0 C.
REACH#: 2 SURFACE AREA: 1,000 sq.m. MAP#: 94 B/1
LOCATION: ABOVE FALLS. (U.T.M. 10.5374.62294)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	103	11.2	-	CC	33	0.64	-	CC	33	0.3	-				
CC	85	6.7	-	CC	75	3.5	-	CC	36	0.4	-				
CC	86	6	-	CC	40	0.9	-	CC	36	0.4	-				
CC	73	4.3	-	CC	40	0.8	-								
CC	84	8.7	-	CC	40	0.6	-								
CC	87	8.9	-	CC	31	0.4	-								
CC	93	8.4	-	CC	38	0.3	-								
CC	96	10.1	-	CC	94	9	-								
CC	94	8.7	-	CC	80	5	-								
CC	82	5.7	-	CC	74	3.8	-								
CC	80	5.3	-	CC	71	3.1	-								
CC	76	4.7	-	CC	43	0.8	-								
CC	99	9	-	CC	34	0.4	-								
CC	81	5.6	-	CC	32	0.3	-								
CC	33	0.3	-	CC	79	4.4	-								
CC	37	0.3	-	CC	83	5.1	-								
CC	74	3.7	-	CC	93	8.6	-								
CC	35	0.4	-	CC	77	4.5	-								
CC	34	0.5	-	CC	37	0.4	-								
CC	37	0.5	-	CC	33	0.4	-								

*TOTAL OF 150 CC CAUGHT, ONLY 43 SAMPLED

ELECTROFISHING DATA

SYSTEM: LAFFERTY DATE: 89/08/23 WATER TEMP.: 10.0 C.
REACH#: 3 SURFACE AREA: 175 sq.m. MAP#: 94 C/8
LOCATION: 75 m. TO 125 m. DOWNSTREAM OF BRIDGE. (10.4232.62471)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CCG	80	6.1	-	CCG	55	2.1	-								
CCG	70	3.3	-	CCG	55	1.8	-								
CCG	64	2.8	-	CCG	78	4.7	-								
CCG	84	6.1	-	CCG	58	2.1	-								
CCG	61	2.1	-	CCG	57	2.1	-								
CCG	67	4.2	-	CCG	54	1.6	-								
CCG	57	2.1	-	CCG	55	1.8	-								
CCG	62	2.4	-	CCG	60	2.1	-								
CCG	64	2.8	-	CCG	60	2	-								
CCG	66	3	-	CCG	55	1.4	-								
CCG	68	3.2	-	CCG	49	1.2	-								
CCG	55	1.7	-	CCG	46	0.9	-								
CCG	66	2.9	-	CCG	32	0.4	-								
CCG	47	1.2	-	RB	94	11	2								
CCG	32	0.4	-	RB	190	95.4	1								
CCG	40	0.6	-	RB	28	0.2	0								
CCG	74	4.4	-	DV	55	1.8	0								
CCG	79	5	-												
CCG	74	3.9	-												
CCG	65	2.7	-												

ELECTROFISHING DATA

SYSTEM: Manson DATE: 89/08/09 WATER TEMP.: 15.5 C.

REACH#: 1 SURFACE AREA: 300 sq.m. MAP#: 93 0/12

LOCATION: MANSON RIVER RECREATION SITE. (U.T.M. 10.4443.61717)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	56	1.8	-	RB	45	1.1	0	RB	205	105.9	3				
CC	80	5.5	-	RB	40	0.6	0	NSC	70	3.6	-				
CC	47	1.4	-	RB	40	0.7	0	SU	58	1.8	-				
CC	46	1.2	-	RB	40	0.6	0	RSC	76	6.1	-				
CC	51	1.6	-	RB	36	0.4	0								
CC	83	5.4	-	RB	38	0.4	0								
CC	70	3.9	-	RB	37	0.5	0								
CC	71	3.8	-	RB	32	0.3	0								
CC	89	8.5	-	RB	37	0.5	0								
CC	51	1.5	-	RB	32	0.3	0								
CC	51	1.3	-	RB	33	0.4	0								
CC	58	2	-	RB	32	0.3	0								
CC	46	1.1	-	RB	34	0.4	0								
CC	55	1.6	-	RB	35	0.5	0								
CC	57	1.4	-	RB	36	0.5	0								
CC	81	5.1	-	RB	33	0.3	0								
CC	21	0.1	-	RB	103	12.5	1								
CC	92	7.9	-	RB	107	12.6	1								
CC	79	4.8	-	RB	94	8.3	1								
CC	75	4.2	-	RB	74	4.1	1								

ELECTROFISHING DATA

SYSTEM: Manson DATE: 89/08/07 WATER TEMP.: 14.5 C.

REACH#: 3 SURFACE AREA: 420 sq.m. MAP#: 93 N/9

LOCATION: (U.T.M. 10.4365.61675)

SPECIES	LENGTH mm	Weight g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	75	4.5	-	RB	95	8.2	1								
CC	71	4.1	-	RB	42	0.6	0								
CC	66	2.8	-	RB	36	0.4	0								
CC	64	2.6	-	RB	38	0.4	0								
CC	53	1.4	-	RB	37	0.3	0								
CC	74	4	-	RB	38	0.5	0								
CC	67	2.7	-	RB	34	0.4	0								
CC	62	2.3	-	RB	37	0.4	0								
CC	38	0.7	-	BB	305	161	-								
CC	36	0.8	-	BB	150	17.6	-								
CC	45	0.9	-	BB	141	16.1	-								
CC	52	1.6	-	BB	60	9	-								
CC	52	1.4	-												
CC	41	0.6	-												
CC	46	1	-												
CC	50	1.3	-												
CC	44	0.9	-												
CC	43	0.7	-												
CC	45	0.9	-												
CC	38	0.7	-												

ELECTROFISHING DATA

SYSTEM: Manson DATE: 89/08/07 WATER TEMP.: 13.0 C.
REACH#: 4 SURFACE AREA: 360 sq.m. MAP#: 93 N/9
LOCATION: AT MUNRO CREEK BRIDGE CROSSING. (U.T.M. 10.4323.61561)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
RB	147	37.1	2	BB	105	7	-								
RB	155	56	2	MW	59	2	-								
RB	106	16.2	1	DC	52	1.6	-								
RB	115	18.3	1												
RB	103	11.1	1												
RB	100	11.5	1												
RB	41	0.6	0												
RB	108	15	1												
RB	139	32.6	1												
RB	40	0.6	0												
CCG	84	6.2	-												
CCG	60	2.4	-												
CCG	82	6.9	-												
CCG	75	4.9	-												
CCG	70	3.6	-												
CCG	65	2.7	-												
CCG	45	1.3	-												
CCG	20	0.05	-												
BB	146	17.7	-												
BB	135	16.6	-												

ELECTROFISHING DATA

SYSTEM: Manson DATE: 89/08/07 WATER TEMP.: 15.5 C.
REACH#: 5 SURFACE AREA: 340 sq.m. MAP#: 93 N/9
LOCATION: IMMEDIATELY UPSTREAM OF OMINECA MINING ROAD BRIDGE. (U.T.M. 10.4271.61553)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CCG	43	4	-	CCG	77	3.9	-	CCG	46	0.6	-	CCG	77	4.9	-
CCG	70	3.2	-	CCG	61	2.1	-	CCG	47	0.9	-	CCG	75	3.7	-
CCG	47	1.3	-	CCG	60	2	-	CCG	52	1.2	-	CCG	46	0.9	-
CCG	54	1.6	-	CCG	50	1	-	CCG	40	0.6	-	CCG	47	0.9	-
CCG	60	2.2	-	CCG	60	2.9	-	CCG	45	0.6	-	LNC	44	0.9	-
CCG	62	3	-	CCG	50	1.3	-	CCG	45	0.8	-	LNC	54	1.3	-
CCG	72	3.9	-	CCG	57	1.8	-	CCG	43	0.8	-	LNC	23	0.1	-
CCG	70	3.7	-	CCG	40	0.5	-	CCG	19	0.1	-	LNC	23	0.1	-
CCG	68	3.2	-	CCG	40	0.5	-	CCG	19	0.1	-	BB	105	7.2	-
CCG	72	3.2	-	CCG	54	1.5	-	LNC	81	5	-	BB	107	7.8	-
CCG	67	2.9	-	CCG	38	0.7	-	LNC	65	2.3	-	BB	55	1.3	-
CCG	75	4.9	-	CCG	42	0.8	-	LNC	56	1.6	-	BB	61	1.7	-
CCG	78	4.5	-	CCG	46	1.2	-	LNC	56	1.5	-	BB	57	1.4	-
CCG	73	3.7	-	CCG	53	1.4	-	LNC	65	2.1	-	BB	95	4.9	-
CCG	60	2.3	-	CCG	40	0.6	-	LNC	51	1.2	-	BB	65	1.9	-
CCG	60	2.3	-	CCG	39	0.6	-	LNC	50	1	-	BB	63	1.6	-
CCG	58	1.9	-	CCG	44	0.7	-	LNC	50	1.2	-	BB	69	1.9	-
CCG	61	2.2	-	CCG	43	1.1	-	LNC	55	1.4	-	BB	70	2.1	-
CCG	81	5	-	CCG	40	0.6	-	LNC	44	0.9	-	RB	35	0.4	0+
CCG	59	2.1	-	CCG	38	0.5	-	LNC	44	0.8	-	RB	40	0.6	0+
CCG	53	1.5	-	CCG	66	2.8	-	LNC	43	0.6	-	RB	38	0.5	0+
CCG	68	3.1	-	CCG	70	2.9	-	LNC	45	0.7	-	RB	36	0.3	0+
CCG	67	3.1	-	CCG	55	1.6	-	LNC	56	1.6	-	RB	110	11.9	1+
CCG	57	1.9	-	CCG	82	5.7	-	LNC	55	1.4	-				

ELECTROFISHING DATA

SYSTEM: Manson DATE: 89/08/09 WATER TEMP.: 15.5 C.
REACH#: 6 SURFACE AREA: 200 sq.m. MAP#: 93 N/9
LOCATION: (U.T.M. 10.4229.61568)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
RB	264	212.7	4												
RB	171	53.8	2												
RB	184	69.2	2												
RB	174	51.7	2												
RB	163	47.3	2												
RB	123	19.8	1												
RB	53	1.7	0												
RB	39	0.7	0												
CC	69	3.5	-												
CC	56	2.3	-												
CC	45	1	-												
CC	39	0.7	-												
CC	38	0.6	-												
MW	139	25.1	-												
MW	129	19	-												
BB	106	7.1	-												
DC	54	1.8	-												

ELECTROFISHING DATA

SYSTEM: Manson (Carmella) DATE: 91/08/28 WATER TEMP.: 8.0 C.
REACH#: N/A SURFACE AREA: 150 sq.m. MAP#: 93 N/9
LOCATION: ACCESSED VIA CARMELLA MAINLINE. (U.T.M. 10.4336.61676)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
DV	295	300	5												
DV	46	0.9	0												
DV	101	11.7	1+												
DV	131	23.5	2+												
RB	118	22.2	2+												

ELECTROFISHING DATA

SYSTEM: MANSON (DONNA) DATE: 89/08/09 WATER TEMP.: 11.5 C.
REACH#: 1 SURFACE AREA: 250 sq.m. MAP#: 93 N/9
LOCATION: FROM 50 m. TO 175 m. DOWNSTREAM OF BRIDGE OVER FINLAY-MANSON FSR. (10.4242.61570)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	55	1.8	-	RB	45	1	0+								
CC	74	5.1	-	RB	48	1	0+								
CC	58	2.2	-	RB	49	1.1	0+								
CC	75	4.6	-	RB	41	0.8	0+								
CC	81	6.8	-	RB	48	0.9	0+								
CC	79	6.2	-	MW	304	291	5+								
CC	86	8	-												
CC	71	3.2	-												
CC	83	7.5	-												
CC	84	6	-												
CC	81	6.7	-												
CC	81	6.7	-												
CC	76	5.4	-												
CC	57	2.5	-												
RB	98	11.2	1+												
RB	49	1.1	0+												
RB	45	0.8	0+												
RB	49	0.9	0+												
RB	54	1.3	0+												
RB	46	0.9	0+												

ELECTROFISHING DATA

SYSTEM: MANSON (DONNA) DATE: 91/08/27 WATER TEMP.: 8.0 C.
REACH#: 1 SURFACE AREA: 250 sq. m.
LOCATION: FROM 50 m. TO 175 m. DOWNSTREAM OF BRIDGE OVER FINLAY-MANSON FSR. (10.4242.61570)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	86	6.4	-												
CC	86	7.9	-												
CC	81	6.9	-												
RB	121	20	1												

ELECTROFISHING DATA

SYSTEM: MANSON (GAFFNEY) DATE: 89/08/08 WATER TEMP.: 17.5 C.
REACH#: 1 SURFACE AREA: 560 sq.m.
LOCATION: AT ABANDONED SLUICE SITE. (10.4270.61550)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	75	3.8	-	CC	67	3	-	CC	23	0.2	-	RB	37	0.6	0
CC	75	4.3	-	CC	76	4.7	-	RB	177	66.7	2	RB	29	0.3	0
CC	69	3.4	-	CC	67	2.9	-	RB	150	38.8	2	RB	37	0.5	0
CC	62	2.4	-	CC	35	0.6	-	RB	90	7.7	1	RB	36	0.6	0
CC	53	1.7	-	CC	21	0.1	-	RB	42	0.8	0	RB	37	0.7	0
CC	63	2.5	-	CC	79	4.8	-	RB	40	0.7	0	RB	39	0.6	0
CC	75	4.5	-	CC	59	1.9	-	RB	40	0.7	0	RB	39	0.6	0
CC	50	1.3	-	CC	68	3.1	-	RB	40	0.6	0	RB	40	0.7	0
CC	53	1.7	-	CC	68	3.1	-	RB	39	0.5	0	RB	38	0.6	0
CC	74	4.5	-	CC	64	2.9	-	RB	41	0.7	0	RB	40	0.9	0
CC	70	3.8	-	CC	72	3.7	-	RB	38	0.5	0	RB	35	0.5	0
CC	41	0.9	-	CC	45	0.9	-	RB	41	0.7	0	RB	40	0.7	0
CC	55	1.7	-	CC	59	1.9	-	RB	44	0.9	0	RB	26	0.1	0
CC	70	3.2	-	CC	56	2.1	-	RB	33	0.7	0	RB	40	0.7	0
CC	72	3.8	-	CC	51	1.4	-	RB	42	0.8	0	RB	38	0.7	0
CC	78	4.8	-	CC	40	0.7	-	RB	38	0.7	0	BB	123	10.2	-
CC	63	2.4	-	CC	39	0.6	-	RB	40	0.6	0	BB	129	11.4	-
CC	55	1.6	-	CC	37	0.6	-	RB	40	0.7	0	BB	145	14.7	-
CC	53	1.6	-	CC	42	0.9	-	RB	42	0.8	0	BB	240	85.4	-
CC	62	2.7	-	CC	43	1.3	-	RB	33	0.4	0	LNC	69	4.1	-
CC	20	0.1	-	CC	39	0.7	-	RB	36	0.3	0	LNC	66	3.4	-
CC	23	0.2	-	RB	37	0.6	0	RB	34	0.4	0				

ELECTROFISHING DATA

SYSTEM: MANSON (GAFFNEY) DATE: 91/08/27 WATER TEMP.: 11.0 C.
REACH#: 1 SURFACE AREA: 560 sq. m.
LOCATION: AT ABANDONED SLUICE SITE. (10.4270.61550)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	51	1.2	-												
CC	48	1.1	-												
CC	39	0.6	-												
CC	39	0.6	-												
BB	69	3.3	-												
BB	110	7.8	-												
BB	110	7.8	-												
RB	48	1.3	0												
RB	53	1.8	0												
RB	48	1.1	0												

ELECTROFISHING DATA

SYSTEM: Manson (Munro) DATE: 89/08/07 WATER TEMP.: 10.0 C.
REACH#: 1 SURFACE AREA: 150 sq.m. MAP#: 93 N/9
LOCATION: TO 50 m. UPSTREAM OF FIRST BRIDGE CROSSING. (U.T.M. 10.4339.61549)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
DV	132	21	-												
DV	53	1.5	0+												
CC	35	0.4	-												
CC	39	0.6	-												

ELECTROFISHING DATA

SYSTEM: MANSON (MUNRO) DATE: 91/08/28 WATER TEMP.: 8.0 C.
REACH#: 1 SURFACE AREA: 150 sq. m.
LOCATION: TO 50 m. UPSTREAM OF FIRST BRIDGE CROSSING. (U.T.M. 10.4339.61549)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	81	5.3	-												
CC	41	0.6	-												
RB	141	37.4	2												

ELECTROFISHING DATA

SYSTEM: Manson (Unnamed trib.) DATE: 91/08/27 WATER TEMP.: 8.0 C.
REACH#: N/A SURFACE AREA: 350 sq.m. MAP#: 93 N/9
LOCATION: DIFFICULT ACCESS DUE TO STEEP BANKS. (U.T.M. 10.4216.61553)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
RB	127	23	2+												
RB	156	54.3	2+												
RB	73	4.9	0+												
RB	101	12.4	1+												

ELECTROFISHING DATA

SYSTEM: Manson (Winn) DATE: 91/08/28 WATER TEMP.: 8.0 C.

REACH#: N/A SURFACE AREA: 188 sq.m. MAP#: 93 N/9

LOCATION: BRIDGE AT 20 km. ON FINLAY-MANSON FSR...FROM BRIDGE TO 75 m. DOWNSTREAM. (U.T.M. 10.4351.61596)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
RB	139	31.1	2+												
RB	73	8.7	1+												
RB	74	4.9	0+												
RB	102	12.9	1+												
RB	95	10.2	1+												
RB	92	8.6	1+												
DV	87	7.8	1+												
DV	183	54	2+												

ELECTROFISHING DATA

SYSTEM: MISINCHINKA DATE: 90/08/27 WATER TEMP.: 12.5 C.

REACH#: 4, site 1 SURFACE AREA: 900 sq.m. MAP#: 93 0/7

LOCATION: SIDE CHANNEL AT UPPER ROAD CROSSING NEAR BIJOUX FALLS. (U.T.M. 10.5234.61504)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CCG	91	9.5	-	CCG	45	0.8	-								
CCG	82	5.1	-	CCG	48	1.5	-								
CCG	83	6	-	CCG	47	1.1	-								
CCG	69	3	-	DV	41	1	0+								
CCG	63	3	-	DV	41	0.7	0+								
CCG	74	4	-	DV	178	50.1	2+								
CCG	43	1	-	DV	167	41.3	-								
CCG	44	0.9	-	MW	65	2.6	-								
CCG	62	2.9	-	MW	64	2.3	-								
CCG	60	2.3	-	MW	56	2	-								
CCG	61	2	-	MW	60	2.2	-								
CCG	47	1.2	-	RB	43	0.7	0+								
CCG	40	0.7	-	RB	111	14	1+								
CCG	41	0.8	-	BB	155	18.5	-								
CCG	40	1.1	-	BB	156	21.6	-								
CCG	42	1	-												
CCG	60	2.1	-												
CCG	41	0.9	-												
CCG	42	1	-												
CCG	40	0.8	-												

ELECTROFISHING DATA

SYSTEM: Misinchinka DATE: 90/08/20 WATER TEMP.: 12.0 C.
REACH#: 4, site 2 SURFACE AREA: 130 sq.m. MAP#: 93 0/7
LOCATION: upper extent of reach 4, closest road gets to river (U.T.M. 10.5255.61326)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	76	5.1	-	CC	55	1.6	-	RB	35	0.4	0+				
CC	54	2.7	-	CC	50	1.4	-	RB	45	1	0+				
CC	71	3.3	-	CC	65	2.5	-	RB	49	1.3	0+				
CC	71	3.6	-	CC	62	2.3	-	BB	162	23.9	-				
CC	98	8.7	-	CC	71	3.5	-	BB	151	17.9	-				
CC	46	0.9	-	CC	56	1.7	-	BB	164	22.8	-				
CC	48	1.2	-	CC	49	1.2	-								
CC	61	2.2	-	CC	48	1	-								
CC	79	4.3	-	CC	63	2.1	-								
CC	52	1.3	-	RB	44	1.1	0+								
CC	44	0.8	-	RB	34	0.5	0+								
CC	66	2.6	-	RB	40	0.7	0+								
CC	75	4.4	-	RB	34	0.5	0+								
CC	48	1.2	-	RB	28	0.2	0+								
CC	55	2.7	-	RB	39	0.7	0+								
CC	59	3.4	-	RB	34	0.4	0+								
CC	66	2.7	-	RB	46	0.8	0+								
CC	61	2.5	-	RB	43	0.8	0+								
CC	70	3.2	-	RB	38	0.5	0+								
CC	56	1.7	-	RB	36	0.4	0+								

ELECTROFISHING DATA

SYSTEM: Misinchinka DATE: 90/08/29 WATER TEMP.: 12.0 C.
REACH#: 4, site 3 SURFACE AREA: 108 sq.m. MAP#: 93 0/7
LOCATION: At visible access off hwy 97N. just before Bijoux falls (U.T.M. 10.5206.61281)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CCG	44	0.9	-												
CCG	44	0.8	-												
CCG	43	1	-												
CCG	41	0.6	-												
CCG	40	0.6	-												
CCG	37	0.6	-												
CCG	46	1.1	-												
CCG	48	1.2	-												
CCG	40	0.9	-												
CCG	50	1.1	-												
CCG	46	1	-												
CCG	46	1.2	-												
CCG	45	0.9	-												
CCG	43	0.9	-												
RB	44	0.9	0+												
RB	44	0.9	0+												

ELECTROFISHING DATA

SYSTEM: Misinchinka DATE: 90/08/28 WATER TEMP.: 9.5 C.
REACH#: 6, site 1 SURFACE AREA: 160 sq.m. MAP#: 93 0/7
LOCATION: At highest road crossing on river (U.T.M. 10.5306.61255)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
DV	63	2.3	0+	DV	126	21.4	1+								
DV	55	2.1	0+												
DV	54	2.1	0+												
DV	52	1.8	0+												
DV	56	1.8	0+												
DV	59	1.8	0+												
DV	47	1.1	0+												
DV	60	1.9	0+												
DV	49	1.4	0+												
DV	43	1	0+												
DV	53	1.5	0+												
DV	66	2.6	0+												
DV	100	11.5	1+												
DV	94	9.7	1+												
DV	130	20.2	2+												
DV	133	24.3	2+												
DV	103	12.5	1+												
DV	107	14.2	1+												
DV	106	13.7	1+												
DV	131	21.7	1+												

ELECTROFISHING DATA

SYSTEM: Mugaha DATE: 90/08/01 WATER TEMP.: 11.0 C.
REACH#: 1 SURFACE AREA: 415 sq.m. MAP#: 93 0/6
LOCATION: 100 m. upstream of bridge crossing (U.T.M. 10.4886.61386)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	95	-	-	MW	64	2.1	-	MW	70	-	-				
CC	86	-	-	MW	61	2	-	MW	71	-	-				
CC	81	-	-	MW	49	1.1	-	MW	63	-	-				
CC	84	-	-	MW	64	2	-	RB	86	5.7	1+				
CC	76	-	-	MW	70	3.2	-	RB	93	8.4	1+				
CC	50	-	-	MW	65	2.4	-	RB	93	8.9	1+				
CC	79	-	-	MW	66	2.6	-	RB	79	5.9	1+				
CC	74	-	-	MW	56	1.5	-	RB	98	10	1+				
CC	65	-	-	MW	66	2.2	-	SU	93	-	-				
CC	76	-	-	MW	54	1.3	-	SU	101	-	-				
CC	78	-	-	MW	66	1.6	-	NSC	43	-	-				
CC	74	-	-	MW	63	2	-	NSC	50	-	-				
CC	50	-	-	MW	57	1.5	-	BB	190	35.4	-				
CC	65	-		MW	63	2.1	-	BB	135	13.9	-				
CC	51	-	-	MW	61	1.9									
CC	45	-	-	MW	65	-	-								
CC	50	-	-	MW	57	-	-								
CC	61	-	-	MW	58	-	-								
CC	50	-	-	MW	63	-	-								
MW	70	3	-	MW	59	-	-								

*Note- An additional 48 sculpins were captured but not measured.

ELECTROFISHING DATA

SYSTEM: MUGAHA DATE: 90/08/02 WATER TEMP.: 11.0 C.
REACH#: 2 SURFACE AREA: 970 sq.m. MAP#: 93 0/6
LOCATION: 1 km. UPSTREAM OF ROAD WASHOUT. (U.T.M. 10.4923.61429)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	85	-	-	CC	100	-	-	MW	116	12.9	-				
CC	105	-	-	CC	75	-	-	MW	122	18.1	-				
CC	71	-	-	CC	70	-	-								
CC	81	-	-	CC	50	-	-								
CC	81	-	-	CC	44	-	-								
CC	75	-	-	CC	39	-	-								
CC	96	-	-	CC	35	-	-								
CC	82	-	-	CC	34	-	-								
CC	76	-	-	RB	149	41.4	2+								
CC	83	-	-	RB	133	27.2	-								
CC	82	-	-	RB	120	19.2	2+								
CC	85	-	-	RB	121	23	1+								
CC	80	-	-	RB	96	10.2	1+								
CC	85	-	-	RB	90	9.1	1+								
CC	76	-	-	RB	89	9.3	1+								
CC	64	-	-	RB	84	7.8	1+								
CC	57	-	-	RB	84	7.1	1+								
CC	62	-	-	RB	143	27.2	2+								
CC	33	-	-	MW	176	18.2	-								
CC	52	-	-	MW	226	157.1	3+								

ELECTROFISHING DATA

SYSTEM: NABESCHE DATE: 91/08/08 WATER TEMP.: 15.0
REACH#: 3 SURFACE AREA: 3,000 sq.m. MAP#: 94 B/6
LOCATION: FROM CONFLUENCE WITH EMERSLUND TO 300 m. DOWNSTREAM ON NABESCHE. (U.T.M. 10.4919.62369)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
DV	153	39.4	1+												
DV	163	43.8	1+												

ELECTROFISHING DATA

SYSTEM: NABESCHE DATE: 91/08/11 WATER TEMP.: 11.0 C.

REACH#: N/A SURFACE AREA: 700 sq.m. MAP#: 94 B/6

LOCATION: AT 45 km. CLEARCUT, BEYOND VIDEO SURVEY, WHERE PULLED OUT BRIDGE CROSSING EXISTS. (U.T.M. 10.4783.62444)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
DV	288	287	4												

ELECTROFISHING DATA

SYSTEM: NABESCHE (EMERSLUND) DATE: 91/08/08 WATER TEMP.: 15.0 C.

REACH#: 1 SURFACE AREA: 1,000 sq.m. MAP#: 94 B/6

LOCATION: FROM BRIDGE TO 250 m. UPSTREAM. (U.T.M. 10.4917.62372)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
DV	110	14	1+												
DV	53	1.8	0+												
DV	46	1	0+												
DV	102	9.8	1+												
DV	121	18.9	2+												
DV	219	124.8	2+												
DV	172	62.6	2+												
DV	180	67.6	2+												
DV	110	13.5	1+												

ELECTROFISHING DATA

SYSTEM: NATION DATE: 89/08/03 WATER TEMP.: 19.0 C.
REACH#: 1 SURFACE AREA: 200 sq.m. MAP#: 93 0/5
LOCATION: Site starts at WSC station on mainstem and continues upstream for 100 m. (U.T.M. 10.4599.61419)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CCG	67	2.9	-	CCG	42	0.8	-								
CCG	51	1.2	-	CCG	42	0.6	-								
CCG	49	1.6	-	CCG	41	0.8	-								
CCG	66	2.8	-	CCG	47	1.1	-								
CCG	65	2.3	-	CCG	44	0.7	-								
CCG	58	1.9	-	LSU	55	1.8	-								
CCG	53	1.7	-	LSU	68	3.4	-								
CCG	55	1.6	-	LSU	57	1.9	-								
CCG	42	0.8	-	LSU	52	1.5	-								
CCG	56	1.8	-	LSU	62	2.8	-								
CCG	64	2.6	-	LSU	51	1.1	-								
CCG	61	2	-	LSU	59	1.6	-								
CCG	49	1.4	-	LSU	53	1.4	-								
CCG	50	1.3	-	SB	80	4.1	-								
CCG	55	1.7	-												
CCG	58	2	-												
CCG	51	1.4	-												
CCG	50	1.3	-												
CCG	41	0.6	-												
CCG	51	1.4	-												

*Note- 100+ sucker fry in site (approx. 20 -25 mm.)

ELECTROFISHING DATA

SYSTEM: NATION DATE: 89/08/04 WATER TEMP.: 18.5 C.
REACH#: 2 SURFACE AREA: 525 sq.m. MAP#: 93 0/5
LOCATION: 100 m. upstream of, and 50m. downstream of, upper Nation bridge. (U.T.M. 10.4563.61363)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
GR	59	2	-												
GR	51	1.2	-												
GR	54	1.4	-												
GR	68	3	-												
RB	119	20.4	1												
RB	82	6.6	0												
DC	54	1.6	-												
DC	44	0.6	-												
CC	51	1.4	-												
RSC	54	1.7	-												

ELECTROFISHING DATA

SYSTEM: NATION DATE: 89/08/04 WATER TEMP.: 19.0 C.
REACH#: 3 SURFACE AREA: 330 sq.m. MAP#: 93 0/5
LOCATION: 200 m. DOWNSTREAM OF PATH FROM CUTBLOCK. (U.T.M. 10.4563.61320)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	63	2.5	-	CC	51	1.6	-	BB	128	14	-				
CC	60	2.6	-	CC	53	1.6	-	BB	141	17.2	-				
CC	67	3.1	-	CC	23	0.1	-	SU	25	0.1	-				
CC	67	3.3	-	LNC	90	6.8	-	SU	21	0.1	-				
CC	59	2.3	-	LNC	49	1.5	-								
CC	68	2.9	-	LNC	34	0.6	-								
CC	47	1.2	-	LNC	55	1.6	-								
CC	53	1.5	-	LNC	25	0.1	-								
CC	47	1.2	-	LNC	27	0.2	-								
CC	68	3.6	-	LNC	58	1.3	-								
CC	58	2.3	-	LNC	42	0.8	-								
CC	63	2.6	-	LNC	54	1.7	-								
CC	60	2.5	-	LNC	58	2	-								
CC	55	1.9	-	LNC	46	1.1	-								
CC	53	1.6	-	LNC	36	0.6	-								
CC	48	2.8	-	LNC	21	0.1	-								
CC	57	2	-	RB	100	9.7	0								
CC	53	1.6	-	RB	115	14.3	0								
CC	55	1.7	-	RB	41	0.7	0								
CC	48	1.3	-	BB	211	43.4	-								

ELECTROFISHING DATA

SYSTEM: Nation (Philip) DATE: 89/08/02 WATER TEMP.: 16.5 C.
REACH#: 1, site A SURFACE AREA: 2,000 sq.m. MAP#: 93 0/5
LOCATION: Downstream of falls, 290 m. downstream of bridge crossing. (U.T.M. 10.4602.61285)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
RB	149	31.1	1	RB	40	0.7	0	CC	73	4.5	-	LNC	56	1.9	-
RB	102	9.9	1	RB	39	0.6	0	CC	61	2.8	-	LNC	49	1.4	-
RB	90	7	1	RB	39	0.5	0	CC	65	3.4	-	LNC	54	1.6	-
RB	49	0.9	0	RB	35	0.5	0	CC	46	0.9	-	MW	65	2.9	0
RB	46	1.4	0	RB	37	0.6	0	CC	68	3.5	-	MW	55	1.4	0
RB	47	1.1	0	RB	34	0.5	0	CC	48	1.2	-	MW	67	3	0
RB	42	0.7	0	RB	43	0.8	0	CC	68	3.4	-	MW	67	2.3	0
RB	40	0.9	0	RB	32	0.4	0	CC	88	6.8	-	MW	70	2.9	0
RB	45	1.2	0	RB	40	0.6	0	CC	71	3.9	-	MW	141	26.8	2
RB	44	0.8	0	RB	34	0.3	0	CC	65	2.8	-				
RB	34	0.3	0	RB	33	0.4	0	CC	62	2.3	-				
RB	42	0.7	0	RB	43	0.7	0	CC	51	1.5	-				
RB	41	0.8	0	RB	45	0.9	0	CC	53	1.8	-				
RB	33	0.4	0	RB	42	0.5	0	CC	42	0.8	-				
RB	52	1.3	0	RB	40	0.7	0	CC	43	0.8	-				
RB	94	7.8	1	RB	40	0.7	0	CC	47	1.1	-				
RB	116	14.2	1	RB	34	0.4	0	CC	58	2.4	-				
RB	93	8.2	1	RB	34	0.4	0	LNC	95	9.7	-				
RB	88	6.3	1	CC	70	3.9	-	LNC	95	9.6	-				
RB	89	7.2	1	CC	73	4.5		LNC	109	14.4	-				

ELECTROFISHING DATA

SYSTEM: NATION (PHILIP) DATE: 89/08/02 WATER TEMP.: 16.0 C.
REACH#: 1, site B SURFACE AREA: 335 sq.m. MAP#: 93 0/5
LOCATION: Upstream side of lower bridge crossing, above falls. (U.T.M. 10.4603.61284)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	63	3.6	-	CC	25	0.3	-	BB	155	22	-				
CC	43	1	-	RB	124	18.4	1								
CC	43	1	-	RB	105	11.5	1								
CC	62	2.8	-	RB	100	9	1								
CC	81	5.5	-	RB	104	12	1								
CC	75	4.6	-	RB	38	0.5	0								
CC	69	3.8	-	RB	47	1.3	0								
CC	71	4	-	RB	45	1	0								
CC	70	4.6	-	RB	46	1.9	0								
CC	65	4.2	-	RB	38	0.9	0								
CC	60	3.6	-	RB	43	0.9	0								
CC	55	2.2	-	RB	48	1	0								
CC	54	1.5	-	RB	54	1.5	0								
CC	60	2.5	-	RB	193	77.6	2								
CC	45	1	-	RB	91	7.1	1								
CC	50	1.7	-	RB	44	1.1	0								
CC	44	1	-	DV	113	14.8	1								
CC	44	0.9	-	MW	250	188.3	4								
CC	50	1.3	-	LNC	92	9	-								
CC	43	1.2	-	BB	115	10.1	-								

ELECTROFISHING DATA

SYSTEM: NATION (PHILIP) DATE: 89/08/02 WATER TEMP.: 17.5 C.
REACH#: 2 SURFACE AREA: 1,440 sq.m. MAP#: 93 0/5
LOCATION: BETWEEN 2nd AND 3rd ACCESS ROAD. (U.T.M. 10.4630.61257)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
RB	33	0.1	0	RB	47	1.1	0	RB	40	0.6	0	CCG	58	2.2	-
RB	51	1.2	0	RB	46	1.1	0	RB	39	0.6	0	CCG	76	5.5	-
RB	39	0.5	0	RB	40	0.6	0	RB	50	1.3	0	CCG	60	2.5	-
RB	38	0.5	0	RB	46	0.5	0	RB	39	0.5	0	CCG	57	2.2	-
RB	49	0.9	0	RB	40	0.7	0	RB	36	0.6	0	CCG	49	1.4	-
RB	36	0.2	0	RB	36	0.4	0	RB	46	0.9	0				
RB	41	0.7	0	RB	47	0.8	0	RB	32	0.3	0				
RB	40	0.5	0	RB	42	0.4	0	RB	150	37.5	2				
RB	39	0.1	0	RB	34	0.2	0	RB	158	47.7	2				
RB	40	0.5	0	RB	45	0.4	0	RB	100	9.5	1				
RB	42	0.5	0	RB	38	0.3	0	RB	93	8.1	1				
RB	47	1.2	0	RB	42	0.4	0	CCG	67	3.6	-				
RB	36	0.5	0	RB	44	0.3	0	CCG	46	1.4	-				
RB	38	0.6	0	RB	32	0.2	0	CCG	24	0.2	-				
RB	45	1.1	0	RB	33	0.1	0	CCG	47	1.4	-				
RB	47	0.5	0	RB	52	0.7	0	CCG	61	2.8	-				
RB	39	0.4	0	RB	33	0.3	0	CCG	25	0.1	-				
RB	43	0.8	0	RB	50	0.8	0	CCG	53	1.6	-				
RB	34	0.4	0	RB	44	0.3	0	CCG	52	1.9	-				
RB	41	0.9	0	RB	43	0.7	0	CCG	57	2.4	-				

ELECTROFISHING DATA

SYSTEM: NATION (PHILIP) DATE: 89/08/05 WATER TEMP.: 16.5 C.
REACH#: 4 SURFACE AREA: 400 sq.m. MAP#: 93 0/4
LOCATION: 25 m. upstream of Finlay-Philip FSR bridge to 125 m. upstream of bridge. (U.T.M. 10.4615.61063)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CCG	62	2.5	-	CAS	62	2.3	-	MW	130	19.1	1				
CCG	69	4.1	-	CAS	59	1.8	-	BB	140	15.9	-				
CCG	77	5	-	CAS	62	2.6	-	BB	92	5.5	-				
CCG	61	2.6	-	CAS	100	10.8	-	BB	117	9.7	-				
CCG	44	0.8	-	RB	165	50.4	2	BB	90	4.3	-				
CCG	61	2.3	-	RB	121	17.4	1	BB	98	5.9	-				
CCG	43	1	-	RB	144	33.3	1	RSC	115	17	-				
CCG	44	1	-	RB	125	21	1	RSC	70	4.4	-				
CCG	43	1	-	RB	152	37.5	2	CSU	40	1	-				
CCG	31	0.5	-	RB	110	15.8	1								
CCG	80	7	-	RB	100	9.9	1								
CCG	82	7.3	-	RB	176	59.7	2								
CCG	68	3.8	-	RB	145	31	1								
CCG	68	3.6	-	RB	170	49.2	2								
CCG	61	3.2	-	MW	160	38.4	1								
CAS	59	2.2	-	MW	153	38.8	1								
CAS	59	2	-	MW	140	28.6	1								
CAS	51	1.2	-	MW	250	158.7	4								
CAS	58	1.6	-	MW	175	62.1	3								
CAS	70	2.6	-	MW	192	68.5	2								

ELECTROFISHING DATA

SYSTEM: PESIKA DATE: 89/08/25 WATER TEMP.: 9.0 C.
REACH#: 1 SURFACE AREA: 150 sq.m. MAP#: 94 C/4
LOCATION: FROM BRIDGE CROSSING TO 160 m. DOWNSTREAM. (U.T.M. 10.3772.63176)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
DV	46	1	0												
DV	46	0.9	0												
DV	70	3.2	-												
DV	47	0.9	0												
DV	49	1.2	0												
MW	53	1.6	-												
MW	44	0.6	-												
MW	42	0.6	-												
CCG	89	6.9	-												

ELECTROFISHING DATA

SYSTEM: SCHOOLER DATE: 89/07/17 WATER TEMP.: 13.0 C.
REACH#: 1, site 1 SURFACE AREA: 225 sq.m. MAP#: 94 B/2
LOCATION: AT MOUTH OF CREEK. (U.T.M. 10.5142.62212)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
DV	121	19.2	-												
DV	133	25.2	-												
DV	179	52.8	-												
DV	217	109.4	-												
DV	168	45.1	-												
DV	135	27.3	-												
DV	169	49.4	-												
DV	92	9	-												
DV	82	6.5	-												
MW	279	295.7	5												

ELECTROFISHING DATA

SYSTEM: SCHOOLER DATE: 89/07/16 WATER TEMP.: 12.7 C.
REACH#: 1, SITE 2 SURFACE AREA: 500 sq.m. MAP#: 94 B/2
LOCATION: JUST DOWNSTREAM OF REACH BREAK SEPARATING REACH 1 AND 2. (U.T.M. 10.5137.62245)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
DV	91	8.4	-												
DV	82	6.1	-												
DV	178	64.9	-												
DV	84	6.7	-												
DV	123	21.1	-												
DV	76	5	-												
DV	92	8.9	-												
DV	96	8.7	-												
DV	127	18.3	-												
DV	82	6.9	-												
DV	81	5.1	-												

ELECTROFISHING DATA

SYSTEM: SCOTT DATE: 89/07/03 WATER TEMP.: 9.0 C.

REACH#: 3 SURFACE AREA: 1,000 sq.m. MAP#: 93 0/13

LOCATION: START AT FSR BRIDGE CROSSING TO 200 m. DOWNSTREAM. (U.T.M. 10.4664.61787)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
DV	141	28.2	-	DV	73	4.5	-	CC	61	2.3	-	CC	54	1.7	
DV	81	5.8	-	DV	85	6.4	-	CC	71	3.8	-	CC	45	1.2	-
DV	71	4.1	-	DV	72	4.5	-	CC	62	2.4	-	RB	97	10.1	-
DV	71	5.7	-	DV	75	4.4	-	CC	70	3.7					
DV	80	5	-	DV	74	4.8	-	CC	90	8					
DV	111	16.1	-	DV	83	7.3	-	CC	76	3.9	-				
DV	113	18.4	-	DV	74	4	-	CC	64	2.5	-				
DV	73	4.4	-	DV	79	4.7	-	CC	66	3.3	-				
DV	33	0.3	0	DV	75	4.4	-	CC	73	4	-				
DV	31	0.3	0	DV	102	14.1	-	CC	52	1.6	-				
DV	71	4.3	-	DV	81	5.6	-	CC	50	1.5	-				
DV	34	0.3	0	DV	77	6.2	-	CC	47	1.1	-				
DV	28	0.2	0	DV	71	4.2	-	CC	47	1	-				
DV	32	0.4	0	DV	72	4.3	-	CC	46	1.3	-				
DV	30	0.3	0	DV	75	4.1	-	CC	46	1.1	-				
DV	31	0.2	0	DV	79	4.7	-	CC	30	0.6	-				
DV	89	8.5	-	CC	90	8.8	-	CC	27	0.3	-				
DV	78	5.4	-	CC	85	7	-	CC	32	0.3	-				
DV	78	5.4	-	CC	80	6.2	-	CC	50	1.5	-				
DV	79	5.6	-	CC	96	10.5	-	CC	66	3.4	-				

ELECTROFISHING DATA

SYSTEM: SIX MILE DATE: 90/09/27 WATER TEMP.: 6.0 C.

REACH#: 1 SURFACE AREA: 355 sq.m. MAP#: 93 0/11

LOCATION: Road crossing downstream of confluence with Patsuk (U.T.M. 10.4746.61634)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CCG	58	1.9	-	RB	36	0.5	0+	DV	55	1.7	0+				
CCG	53	1.9	-	RB	38	0.7	0+	DV	44	0.7	0+				
CCG	67	2.9	-	RB	42	0.8	0+	DV	44	0.9	0+				
CCG	77	4.9	-	RB	36	0.4	0+								
CCG	101	13.3	-	RB	42	0.7	0+								
CCG	99	10.2	-	RB	34	0.5	0+								
CCG	96	6.4	-	RB	31	0.3	0+								
CCG	76	4.4	-	RB	38	0.6	0+								
CCG	67	2.9	-	RB	43	1	0+								
CCG	56	1.8	-	RB	38	0.7	0+								
CCG	61	2.5	-	RB	28	0.2	0+								
CCG	57	2.1	-	RB	40	0.7	0+								
CCG	98	9.3	-	DV	120	18.6	2								
CCG	56	1.8	-	DV	52	1.5	0+								
CCG	40	0.7	-	DV	48	1.3	0+								
CCG	49	1.1	-	DV	51	1.4	0+								
CCG	47	0.7	-	DV	49	1.3	0+								
CCG	39	0.7	-	DV	50	1.3	0+								
RB	39	0.7	0+	DV	55	1.6	0+								
RB	36	0.5	0+	DV	55	1.8	0+								

ELECTROFISHING DATA

SYSTEM: WESTON
DATE: 89/06/30
WATER TEMP.: 9.0 C.
REACH#: 1
SURFACE AREA: 450 sq.m.
MAP#: 93 0/13
LOCATION: 100 m. UPSTREAM FROM LOWEST BRIDGE CROSSING. (U.T.M. 10.4579.61848)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
MW	245	170	-	MW	211	102	-								
MW	185	62	-	MW	176	52	-								
MW	225	138.5	-	MW	173	52	-								
MW	220	128	-	CC	82	5.7	-								
MW	215	123	-	CC	90	7.4	-								
MW	227	123	-	CC	84	6.3	-								
MW	191	78	-	CC	69	3.6	-								
MW	231	161	-	CC	62	3.7	-								
MW	181	56	-	CC	63	2.5	-								
MW	170	49	-	CC	71	4.1	-								
MW	226	130	-	CC	68	3.2	-								
MW	210	96	-	CC	44	1.3	-								
MW	239	156	-	RB	143	28	-								
MW	246	180	-	RB	85	7.6	-								
MW	242	161	-	RB	48	1.6	0								
MW	224	135	-	DV	61	2.4	-								
MW	226	122	-	DV	70	3.4	-								
MW	212	124	-												
MW	174	44	-												
MW	208	109	-												

ELECTROFISHING DATA

SYSTEM: WESTON
DATE: 89/07/02
WATER TEMP.: 8.0 C.
REACH#: 2
SURFACE AREA: 500 sq.m.
MAP#: 93 0/13
LOCATION: UPSTREAM 70 m. FROM MAIN FSR CROSSING TO 180m. UPSTREAM. (U.T.M. 10.4618.61836)

SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE	SPECIES	LENGTH mm	WEIGHT g	AGE
CC	83	-	-												
CC	78	-	-												
CC	72	-	-												
CC	79	-	-												
CC	61	-	-												
CC	56	-	-												
CC	65	-	-												
CC	50	-	-												
CC	67	-	-												
DV	138	29.4	-												
DV	118	18.5	-												

SNORKEL SURVEY DATA

KEY FOR SNORKEL SURVEY SUMMARY WILLISTON RESERVOIR TRIBUTARIES

STREAM	DATE		WET		NU	%	WATER	SURV	REACH	HABITAT				ADULT				FISH						ESTIMATE	
		REACH	WID	VIS	OB	COV	TEMP	LENG	LENGT	SPAWN		REAR		HOLD		UTILIZ		OBS	0-10	10-30	30-50	50+	TOTAL	NO./KM	COMMENTS
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26

1. "STREAM"- Stream name, gazetted or alias.

2. "DATE"- Entered in the form YYMMDD. (year month day)

3. "REACH"- Reach within the stream where the survey occured.

4. "WET WID"- Mean wetted width (meters) of the stream in the surveyed section of the stream.

5. "VIS"- Visibility. Distance (m.) a swimmer can see clearly in any one direction under water.

6. "NU OB"- Number of observers (swimmers) conducting the survey.

7. "% COV"- Percentage of stream covered based on (2 X visibility X # of observers). If the observers disagreed with the calculated value, weight was given to the swimmers estimates.

8. "WATER TEMP"- Stream temperature (centigrade). Measured with a hand held alcohol thermometer.

9. "SURV LENG"- Total reach length surveyed (km.)

10. "REACH LENGT"- Total reach length (km.)

11-12. "HABITAT SPAWN"- Evaluation of spawning habitat.(1-nil to 5-excellent) Evaluations are made by 2 observers, and are independent of each other. Different values in column 11 and 12 indicate a difference of opinion between the observers.

13.-14. "HABITAT REARING"- Evaluation of rearing habitat. (1-nil to 5-excellent) Evaluations are made by 2 observers, and are independent of each other. Different values in column 13 and 14 indicate a difference of opinion between the observers.

15.-16. "ADULT HOLD"- Evaluation of adult holding habitat. (1-nil to 5-excellent) Evaluations are made by 2 observers, and are independent of each other. Different values in column 15 and 16 indicate a difference of opinion between the observers.

17.-18. "UTILIZ"- Evaluation of utilization of habitat by fish. Based on fish presence observed. (1-barren to 5-overseeded)

19. "FISH OBS"- Species of fish observed. Abbreviated utilizing the "Fish Habitat Inventory & Information Program" guide lines.

20.-23. Size of fish observed (cm.) Number of fish observed in each size category. (ie. 5 fish in the 10-30 cm. size range would appear as 5 in column 21)

24. "TOTAL"- Total number of fish (Specific species) observed in the surveyed area.

25. "ESTIMATE NO./km."- Number of fish present per km. of stream. As determined from the formula:
(# of fish observed X 100 / % covered) / survey length)

26. "COMMENTS"- general location and stream characteristics information.

SNORKEL SURVEY SUMMARY WILLISTON RESERVOIR TRIBUTARIES

STREAM	DATE	REACH	WET WID	VIS	NO OB	% COV	WATER TEMP	SURV LENG	REACH LENGT	HABITAT SPAWN		REAR		ADULT HOLD		UTILIZ		FISH OBS	0-10	10-30	30-50	50+	TOTAL	ESTIMATE NO./KM	COMMENTS
CARBON	890715	1	30	3.5	2	55	10	2.6	5.7	2	2	4	4	4	4	2	2	DV	0	0	10	0	10	7.0	
"	"	"	"	"	"	55	"	2.6	"									GR	0	0	1	0	1	0.7	
"	"	"	"	"	"	55	"	2.6	"									MW	0	100	150	0	250	174.8	
"	"	"	"	"	"	55	"	2.6	"									RB	0	0	7	0	7	4.9	
CARBON	890715	1&2	23	4	2	60	10	2	6.7	2	2	3	3	4	4	2	2	DV	0	0	14	0	14	11.7	1 M. FALLS AT END OF CANYON
"	"	"	"	"	"	60	"	2	"									GR	0	0	0	0	0	0.0	90% FISH R2 AT BRIDGE POOL
"	"	"	"	"	"	60	"	2	"									MW	0	30	40	0	70	58.3	AREA OF DIFFICULT PASSAGE AT
"	"	"	"	"	"	60	"	2	"									RB	0	0	4	0	4	3.3	BRIDGE
CARBON	890921	2&3	20	4	2	70	-	3.5	7.6	1	2	4	5	3	4	1	1	DV	0	2	4	0	6	2.4	FOOT BRIDGE TO BURNS RD BRIDG
"	"	"	"	"	"	70	-	3.5	"									MW	0	0	1	0	1	0.4	INCREDIBLE # OF MAYFLY NYMPHS
"	"	"	"	"	"	70	-	3.5	"									RB	0	1	2	0	3	1.2	
CARBON	890715	3	15	4	2	80	10	1	6.6	3	3	4	4	3	3	2	1	DV	0	0	2	0	2	2.5	ALMOST BARREN OF FISH
"	"	"	"	"	"	80	"	1	"									GR					0	0.0	EXCELLENT PARR REARING
"	"	"	"	"	"	80	"	1	"									MW	0	5	15	0	20	25.0	SOME LOD, BUT NOT USED
"	"	"	"	"	"	80	"	1	"									RB	0	0	2	0	2	2.5	VELOCITY HIGH FEW POOLS
CARBON	890716	4&5	21	4	2	70	10	3.5	14.6	3	3	4	5	4	4	1	1	MW	0	1	2	0	3	1.2	EX HAB NO FISH
CARBON	900719	3	20	4	2	70	8	3	6.6									DV	0	13	1	0	14	6.7	10:30 HRS
"	"	"	"	"	"	70	"	3	"									GR	0	0	0	0	0	0.0	NO HATCHERY FISH OBS
"	"	"	"	"	"	70	"	3	"									MW	2	58	12	0	72	34.3	GOOD INVERT'S
"	"	"	"	"	"	70	"	3	"									RB	0	0	1	0	1	0.5	
"	"	"	"	"	"	70	"	3	"									RB*	0	0	0	0	0	0.0	
																								ERR	
CARBON	900719	3	20	4	2	60	9.5	2.2	6.6									DV	0	3	4	0	7	5.3	1330 HRS GOOD AQUATIC
"	"	"	"	"	"	60	"	2.2	"									GR	0	0	0	0	0	0.0	INVERT, NO UPSTREAM
"	"	"	"	"	"	60	"	2.2	"									MW	6	45	10	0	61	46.2	MOVEMENT FROM REL SITE
"	"	"	"	"	"	60	"	2.2	"									RB	0	2	2	0	4	3.0	SOME DOWNSTREAM MOVEMENT
"	"	"	"	"	"	60	"	2.2	"									RB*	0	80	0	0	80	60.6	
CARBON	900719	6	6	4	2	90	9.5	1	4.4									DV	0	1	0	0	1	1.1	1830 HRS ALL FISH OBS
"	"	"	"	"	"	90	"	1	"									GR	0	0	0	0	0	0.0	WITHIN 100 M OF REL SITE
"	"	"	"	"	"	90	"	1	"									MW	0	0	0	0	0	0.0	SIZE RANGE EXTREME 2-50 GMS
"	"	"	"	"	"	90	"	1	"									RB	0	0	0	0	0	0.0	MOST FINS MISSING
"	"	"	"	"	"	90	"	1	"									RB*	0	190	0	0	190	211.1	

SNORKEL SURVEY SUMMARY WILLISTON RESERVOIR TRIBUTARIES

STREAM	DATE	REACH	WET WID	VIS	NO OB	% COV	WATER TEMP	SURV LENG	REACH LENGT	HABITAT SPAWN	REAR	ADULT HOLD	UTILIZ	FISH OBS	0-10	10-30	30-50	50+	TOTAL	ESTIMATE NO./KM	COMMENTS
CARBON	900815	3	20	4	2	70	10.5	3	6.6					DV	1	16	2	0	19	9.0	1400 HRS
"	"	"	"	"	"	70	"	3	"					GR	0	0	0	0	0	0.0	2 HATCHERY FISH BUT MAY
"	"	"	"	"	"	70	"	3	"					MW	0	168	8	0	176	83.8	HAVE BEEN RELEASED AFTER
"	"	"	"	"	"	70	"	3	"					RB	0	14	2	0	16	7.6	ELECTROFISHING ONE V/LARGE
"	"	"	"	"	"	70	"	3	"					RB*	0	2	0	0	2	1.0	HATCHERY FISH BELOW FALLS
CARBON	900815	3	20	4	2	80	10.5	2.2	6.6					DV	0	7	3	0	10	5.7	1430 HRS NO HATCHERY FISH
"	"	"	"	"	"	80	"	2.2	"					GR	0	0	0	0	0	0.0	BUT ELECTROFISHED NEAR
"	"	"	"	"	"	80	"	2.2	"					MW	0	27	13	0	40	22.7	RELEASE SITE AND FOUND FISH
"	"	"	"	"	"	80	"	2.2	"					RB	0	10	3	0	13	7.4	HIDING IN COBBLE SC &
"	"	"	"	"	"	80	"	2.2	"					RB*	0	0	0	0	0	0.0	ON EDGE OF BOULDER RIFFLE
CARBON	900814	6	15	4	2	65	10.5	2.5	4.4					DV	0	12	1	0	13	8.0	1330 HRS MOST FISH NEAR
"	"	"	"	"	"	65	"	2.5	"					GR	0	0	0	0	0	0.0	RELEASE SITE BUT SOME 200 M
"	"	"	"	"	"	65	"	2.5	"					MW	0	0	0	0	0	0.0	DOWN ST SITE 12 MOST RB
"	"	"	"	"	"	65	"	2.5	"					RB	0	3	0	0	3	1.8	IN RIFFLES, ONLY 30 IN GLIDE
"	"	"	"	"	"	65	"	2.5	"					RB*	0	222	0	0	222	136.6	AT S 11. FUNGUS ON FINS
CARBON	900912	3	20	4	2	80	9	3	7.6					DV	0	0	1	0	1	0.4	NO HATCHERY FISH OBS
"	"	"	"	"	"	80	"	3	"					GR	0	0	0	0	0	0.0	
"	"	"	"	"	"	80	"	3	"					MW	5	17	2	0	24	10.0	
"	"	"	"	"	"	80	"	3	"					RB	0	7	2	0	9	3.8	
"	"	"	"	"	"	80	"	3	"					RB*	0	0	0	0	0	0.0	FT BRIDGE TO BURNS BRIDGE
CARBON	900912	3	20	4	2	80	9	2.2	6.6					DV	0	3	2	0	5	2.8	HIGH INVERTEBRATE DENITIES
"	"	"	"	"	"	80	"	2.2	"					GR	0	0	0	0	0	0.0	
"	"	"	"	"	"	80	"	2.2	"					MW	0	4	2	0	6	3.4	
"	"	"	"	"	"	80	"	2.2	"					RB	1	3	3	0	7	4.0	
"	"	"	"	"	"	80	"	2.2	"					RB*	0	3	0	0	3	1.7	REL SITE 2 TO FT BRIDGE
CARBON	900912	4-3	20	3	1	30	9	3.4	8.4					DV	0	0	1	0	1	1.0	HIGH #S CADDIS
"	"	"	"	"	"	30	"	3.4	"					GR	0	0	0	0	0	0.0	
"	"	"	"	"	"	30	"	3.4	"					MW	0	0	0	0	0	0.0	
"	"	"	"	"	"	30	"	3.4	"					RB	0	0	2	0	2	2.0	
"	"	"	"	"	"	30	"	3.4	"					RB*	0	0	0	0	0	0.0	REL SITE 4-3
CARBON	900912	5	8	4	1	70	9	0.3	12.8					DV	0	16	0	0	16	76.2	ALL RB IN FAST WATER
"	"	"	"	"	"	70	"	0.3	"					GR	0	0	0	0	0	0.0	DV IN POOLS
"	"	"	"	"	"	70	"	0.3	"					MW	0	0	0	0	0	0.0	
"	"	"	"	"	"	70	"	0.3	"					RB	0	0	0	0	0	0.0	
"	"	"	"	"	"	70	"	0.3	"					RB*	0	139	0	0	139	661.9	REL SITE 10

SNORKEL SURVEY SUMMARY WILLISTON RESERVOIR TRIBUTARIES

STREAM	DATE	REACH	WET WID	VIS	NO OB	% COV	WATER TEMP	SURV LENG	REACH LENGT	HABITAT SPAWN	REAR	ADULT HOLD	UTILIZ	FISH OBS	0-10	10-30	30-50	50+	TOTAL	ESTIMATE NO./KM	COMMENTS
CARBON	900911	5	15	4	1	55	8	0.2	12.8					DV	0	25	12	0	37	336.4	MOST RBh MUVED FROM RELEASE
"	"	"	"	"	"	55	"	0.2	"					GR	0	0	0	0	0	0.0	SITE..A GLIDE INTO DEEP POOLS
"	"	"	"	"	"	55	"	0.2	"					MW	0	0	0	0	0	0.0	
"	"	"	"	"	"	55	"	0.2	"					RB	0	0	0	0	0	0.0	DV IN POOLS
"	"	"	"	"	"	55	"	0.2	"					RB*	0	121	0	0	121	1100.0	REL SITE 11
CARBON	900911	6	8	4	1	80	8	0.1	4.4					DV	0	12	0	0	12	150.0	REL SITE 12
"	"	"	"	"	"	80	"	0.1	"					GR	0	0	0	0	0	0.0	ALL FISH FAT LOOKING
"	"	"	"	"	"	80	"	0.1	"					MW	0	0	0	0	0	0.0	€€# CADIS LARVAE PRESENT
"	"	"	"	"	"	80	"	0.1	"					RB	0	0	0	0	0	0.0	RBh IN FAST WATER & DEEP POOL
"	"	"	"	"	"	80	"	0.1	"					RB*	0	176	0	0	176	2200.0	
CARBON	910719	1	20	2	2	50	8	4	5.7					DV	0	12	6	4	22	11.0	12 M CABIN POOL TO 10M POOL
"	"	"	"	"	"	50	"	4	"					GR	0	0	0	0	0	0.0	
"	"	"	"	"	"	50	"	4	"					MW	93	854	125	0	1072	536.0	
"	"	"	"	"	"	50	"	4	"					RB	0	14	4	0	18	9.0	
"	"	"	"	"	"	50	"	4	"					RB*	0	0	0	0	0	0.0	
CARBON	910718	1	30	2	2	60	8.5	0.8	5.7					DV	0	7	0	0	7	14.6	TOP OF RE # 1 TO CABIN POOL
"	"	"	"	"	"	60	"	0.8	"					GR	0	0	0	0	0	0.0	MOST FISH IN POOL AT BASE
"	"	"	"	"	"	60	"	0.8	"					MW	20	150	30	0	200	416.7	OF FALLS
"	"	"	"	"	"	60	"	0.8	"					RB	0	2	0	0	2	4.2	
"	"	"	"	"	"	60	"	0.8	"					RB*	0	2	0	0	2	4.2	
CARBON	910718	2	10	2	2	50	8.5	1	1					DV	2	7	0	0	9	18.0	BEDROCK CANYON
"	"	"	"	"	"	50	"	1	"					GR	0	0	0	0	0	0.0	ENTIRE REACH
"	"	"	"	"	"	50	"	1	"					MW	10	35	20	0	65	130.0	
"	"	"	"	"	"	50	"	1	"					RB	0	10	0	0	10	20.0	
"	"	"	"	"	"	50	"	1	"					RB*	0	0	0	0	0	0.0	
CARBON	910718	3	25	2.5	2	70	8.5	3	6.6					DV	0	7	0	0	7	3.3	FT BDG TO BURNS BDG
"	"	"	"	"	"	70	"	3	"					GR	0	0	0	0	0	0.0	ALL RB IN FAST WATER
"	"	"	"	"	"	70	"	3	"					MW	0	91	11	0	102	48.6	
"	"	"	"	"	"	70	"	3	"					RB	0	4	0	0	4	1.9	
"	"	"	"	"	"	70	"	3	"					RB*	0	4	0	0	4	1.9	
CARBON	910719	5-4	20	2.5	2	60	7.5	5	14.6					DV	0	10	3	0	13	4.3	NEW BDG TO MCALL CK
"	"	"	"	"	"	60	"	5	"					GR	0	0	0	0	0	0.0	RE #5 HIGH LOD AND COVER
"	"	"	"	"	"	60	"	5	"					MW	4	47	10	0	61	20.3	ALL FISH IN TWO POOLS
"	"	"	"	"	"	60	"	5	"					RB	0	1	4	0	5	1.7	RE#4 MW IN FAST WATER
"	"	"	"	"	"	60	"	5	"					RB*	0	0	0	0	0	0.0	

SNORKEL SURVEY SUMMARY WILLISTON RESERVOIR TRIBUTARIES

STREAM	DATE	REACH	WET WID	VIS	NO OB	% COV	WATER TEMP	SURV LENG	REACH LENGT	HABITAT SPAWN	REAR	ADULT HOLD	UTILIZ	FISH OBS	0-10	10-30	30-50	50+	TOTAL	ESTIMATE NO./KM	COMMENTS
CARBON	910718	6	15	1.5	2	50	9	2.5	4.4					DV	9	1	2	0	12	9.6	RE SITE 12 TO 11
"	"	"	"	"	"	50	"	2.5	"					GR	0	0	0	0	0	0.0	
"	"	"	"	"	"	50	"	2.5	"					MW	1	2	0	0	3	2.4	
"	"	"	"	"	"	50	"	2.5	"					RB	0	3	0	0	3	2.4	
"	"	"	"	"	"	50	"	2.5	"					RB*	0	2	0	0	2	1.6	
CARBON	910821	1	30	3	2	60	9	4	5.7					DV	0	4	4	0	8	3.3	TOP OF RE TO 10M POOL
"	"	"	"	"	"	60	"	4	"					GR	0	0	0	0	0	0.0	NONE OF LAST YEARS HATCHERY
"	"	"	"	"	"	60	"	4	"					MW	0	530	0	0	530	220.8	FISH OBSERVED
"	"	"	"	"	"	60	"	4	"					RB	0	8	4	0	12	5.0	
"	"	"	"	"	"	60	"	4	"					RB*	0	2	0	0	0	0.0	
"	"	"	"	"	"	60	"	4	"					RB*91	0	2	0	0	2	0.8	
CARBON	910821	2	10	3	2	70	9	1	1					DV	0	1	0	0	1	1.4	ENTIRE REACH ....BR CANYON
"	"	"	"	"	"	70	"	1	"					GR	0	0	0	0	0	0.0	
"	"	"	"	"	"	70	"	1	"					MW	0	50	0	0	50	71.4	
"	"	"	"	"	"	70	"	1	"					RB	0	3	0	0	3	4.3	
"	"	"	"	"	"	70	"	1	"					RB*	0	3	0	0	3	4.3	
"	"	"	"	"	"	70	"	1	"					RB*91	0	2	0	0	2	2.9	
CARBON	910821	3	25	3	2	60	9	3	6.6					DV	0	11	0	0	11	6.1	FT BRIDGE TO BURNS BRIDGE
"	"	"	"	"	"	60	"	3	"					GR	0	0	0	0	0	0.0	
"	"	"	"	"	"	60	"	3	"					MW	20	112	0	0	132	73.3	
"	"	"	"	"	"	60	"	3	"					RB	2	15	1	0	18	10.0	
"	"	"	"	"	"	60	"	3	"					RB*	0	2	0	0	2	1.1	
"	"	"	"	"	"	60	"	3	"					RB*91	0	4	0	0	4	2.2	
CARBON	910822	3	15	2	2	80	7.5	3.6	6.6					DV	0	20	6	3	29	10.1	TOP OF REACH TO FT BDG
"	"	"	"	"	"	80	"	3.6	"					GR	0	0	0	0	0	0.0	
"	"	"	"	"	"	80	"	3.6	"					MW	0	174	7	0	181	62.8	
"	"	"	"	"	"	80	"	3.6	"					RB	0	11	11	0	22	7.6	
"	"	"	"	"	"	80	"	3.6	"					RB*	0	16	2	0	18	6.3	
"	"	"	"	"	"	80	"	3.6	"					RB*91	0	168	8	0	176	61.1	
CARBON	910822	4	20	2	2	70	7.5	1.8	1.8					DV	0	1	1	2	4	3.2	
"	"	"	"	"	"	70	"	1.8	"					GR	0	0	0	0	0	0.0	
"	"	"	"	"	"	70	"	1.8	"					MW	0	1	0	0	1	0.8	
"	"	"	"	"	"	70	"	1.8	"					RB	0	0	0	0	0	0.0	
"	"	"	"	"	"	70	"	1.8	"					RB*	0	0	0	0	0	0.0	
"	"	"	"	"	"	70	"	1.8	"					RB*91	0	0	0	0	0	0.0	

SNORKEL SURVEY SUMMARY WILLISTON RESERVOIR TRIBUTARIES

STREAM	DATE	REACH	WET WID	VIS	NO OB	% COV	WATER TEMP	SURV LENG	REACH LENGT	HABITAT SPAWN	REAR	ADULT HOLD	UTILIZ	FISH OBS	0-10	10-30	30-50	50+	TOTAL	ESTIMATE NO./KM	COMMENTS
CARBON	910822	5	20	3	2	60	7.5	3.2	12.8					DV	0	1	3	2	6	3.1	NEW BRIDGE TO RE BREAK
"	"	"	"	"	"	60	"	3.2	"					GR	0	0	0	0	0	0.0	
"	"	"	"	"	"	60	"	3.2	"					MW	0	0	0	0	0	0.0	
"	"	"	"	"	"	60	"	3.2	"					RB	0	1	0	0	1	0.5	
"	"	"	"	"	"	60	"	3.2	"					RB*	0	0	0	0	0	0.0	
"	"	"	"	"	"	60	"	3.2	"					RB*91	0	0	0	0	0	0.0	
CARBON	910823	5	10	2	3	75	7.5	0.1	12.8					DV	0	1	0	0	1	13.3	RELEASE SITE 11
"	"	"	"	"	"	75	"	0.1	"					GR	0	0	0	0	0	0.0	
"	"	"	"	"	"	75	"	0.1	"					MW	0	0	0	0	0	0.0	
"	"	"	"	"	"	75	"	0.1	"					RB	0	1	0	0	1	13.3	
"	"	"	"	"	"	75	"	0.1	"					RB*	0	3	0	0	3	40.0	
"	"	"	"	"	"	75	"	0.1	"					RB*91	0	50	0	0	50	666.7	
CARBON	910823	6	10	3	2	60	7.5	0.1	4.4					DV	0	0	0	0	0	0.0	RELEASE SITE 12
"	"	"	"	"	"	60	"	0.1	"					GR	0	0	0	0	0	0.0	
"	"	"	"	"	"	60	"	0.1	"					MW	0	0	0	0	0	0.0	
"	"	"	"	"	"	60	"	0.1	"					RB	0	0	0	0	0	0.0	
"	"	"	"	"	"	60	"	0.1	"					RB*	0	0	0	0	0	0.0	
"	"	"	"	"	"	60	"	0.1	"					RB*91	0	28	0	0	28	466.7	
CARBON	920626	3	35	1.5	2	15	7	6.6	6.6					DV	0	1	0	0	1	1.0	mCALLISTER TO BURNS BRIDGE
"	"	"	"	"	"	15	"	6.6	"					GR	0	0	0	0	0	0.0	VISIBILITY POOR
"	"	"	"	"	"	15	"	6.6	"					MW	4	8	7	0	19	19.2	WATER TOO HIGH
"	"	"	"	"	"	15	"	6.6	"					RB	0	0	0	0	0	0.0	
"	"	"	"	"	"	15	"	6.6	"					RB*	0	0	0	0	0	0.0	
"	"	"	"	"	"	15	"	6.6	"					RB*91	0	0	0	0	0	0.0	
CARBON	920626	4	30	1.5	2	15	7	1.8	1.8					DV	0	1	0	0	1	3.7	ENTIRE REACH SWAM
"	"	"	"	"	"	15	"	1.8	"					GR	0	0	0	0	0	0.0	VISIBILITY POOR
"	"	"	"	"	"	15	"	1.8	"					MW	0	3	1	0	4	14.8	
"	"	"	"	"	"	15	"	1.8	"					RB	0	0	0	0	0	0.0	
"	"	"	"	"	"	15	"	1.8	"					RB*	0	0	0	0	0	0.0	
"	"	"	"	"	"	15	"	1.8	"					RB*91	0	0	0	0	0	0.0	
CARBON	920626	5	35	1.5	2	15	7	3.2	12.8					DV	0	2	0	0	2	4.2	KM 82.5 BRIDGE (NEW BDG)
"	"	"	"	"	"	15	"	3.2	"					GR	0	0	0	0	0	0.0	TO REACH 4
"	"	"	"	"	"	15	"	3.2	"					MW	0	0	0	0	0	0.0	WATER TOO HIGH AND DIRTY
"	"	"	"	"	"	15	"	3.2	"					RB	0	0	0	0	0	0.0	
"	"	"	"	"	"	15	"	3.2	"					RB*	0	0	0	0	0	0.0	
"	"	"	"	"	"	15	"	3.2	"					RB*91	0	0	0	0	0	0.0	

SNORKEL SURVEY SUMMARY WILLISTON RESERVOIR TRIBUTARIES

STREAM	DATE		WET		NO	%	WATER	SURV	REACH	HABITAT				ADULT				FISH						ESTIMATE	
		REACH	WID	VIS	OB	COV	TEMP	LENG	LENGT	SPAWN		REAR		HOLD		UTILIZ		OBS	0-10	10-30	30-50	50+	TOTAL	NO./KM	COMMENTS
CLEARWATER	890927	1	25	4	2	75	7	2	9.9	1	2	3	3	4	4	1	1	DV					0	0.0	P 35%, G 30%, R 30%, RN 5%
"	"	"	"	"	"	75	"	2	"									GR					0	0.0	COVER IS BOULDERS & POOLS
"	"	"	"	"	"	75	"	2	"									MW					0	0.0	NO LOO
"	"	"	"	"	"	75	"	2	"									RB					0	0.0	NO KOK SIZE GRAVEL
DAVIS	890826	1	22	1	1	10	11	0.7	4.8	1		2		4		2		DV	0	0	2	0	2	28.6	
"	"	"	"	"	"	10	"	0.7	"									GR					0	0.0	
"	"	"	"	"	"	10	"	0.7	"									MW	0	1	8	0	9	128.6	
"	"	"	"	"	"	10	"	0.7	"									RB					0	0.0	
LAFFERTY	890822	3	7.5	2	2	100	11	2.5	4.7	1		5		3		2		DV	3	2	5	5	15	6.0	NO COARSE FISH OR GR OBS
"	"	"	"	"	"	100	"	2.5	"									GR	0	0	0	0	0	0.0	SUBST SAND &SHALE 2 BEAVER D
"	"	"	"	"	"	100	"	2.5	"									MW	21	43	43	0	107	42.8	10%RI,50G,15RN,25P COMP MOD
"	"	"	"	"	"	100	"	2.5	"									RB	7	17	2	0	26	10.4	STREAM MEANDERS HIGH LOO
MANSON	890810	1	26	2	2	20	16	7.5	9.5	1	2	1	2	1	2	1	1	DV					0	0.0	START AT FS REC SITE
"	"	"	"	"	"	20	"	7.5	"									GR					0	0.0	FAILING BANKS, HIGH % FINES
"	"	"	"	"	"	20	"	7.5	"									MW	6	4	0	0	10	6.7	VISIBILITY VERY POOR
"	"	"	"	"	"	20	"	7.5	"									RB					0	0.0	CHANNEL UNSTABLE
MANSON	890914	1.5	21	4	2	70	11	6	6	5	5	4	4	3	3	2	2	DV	0	2	0	1	3	0.7	ONE POOL IN MID TO LOWER
"	"	"	"	"	"	70	"	6	"									GR	0	0	0	0	0	0.0	VERY GOOD SPAWNING HABITAT
"	"	"	"	"	"	70	"	6	"									MW	80	231	102	0	413	98.3	LOW UTILIZ OF REARING HABITAT
"	"	"	"	"	"	70	"	6	"									RB		35	12	0	47	11.2	1 POOL HAD 300+ MW &12-15 RB
"	"	"	"	"	"	70	"	6	"									SU	0	0	0	1	1	0.2	
MANSON	890914	2	23	4	2	70	11	3	3	1	1	4	4	5	5	2	2	DV	0	0	4	4	8	3.8	SMALL CASCADE, NOT A BARRIER
"	"	"	"	"	"	70	"	3	"									GR	0	0	0	0	0	0.0	NO 0+/1+ FISH EXCEPT MW
"	"	"	"	"	"	70	"	3	"									MW	25	43	20	0	88	41.9	MOST OF FISH WERE IN 3 POOLS
"	"	"	"	"	"	70	"	3	"									RB	0	17	6	0	23	11.0	
								3																	
MANSON	890807	3	33	4	2	50	14.5	4.7	17	1	2	2	3	4	4	2	2	CSU	0	7	21	0	28	11.9	15%P, 5%RN, 50%G, 30%R
"	"	"	"	"	"	50	"	4.7	"									DV	0	0	1	4	5	2.1	ALL ADULT RB IN POOLS
"	"	"	"	"	"	50	"	4.7	"									GR	0	0	0	0	0	0.0	LIMITED FRY HABITAT
"	"	"	"	"	"	50	"	4.7	"									MW	94	126	15	0	235	100.0	SPAWNING HABITAT LIMITED
"	"	"	"	"	"	50	"	4.7	"									RB	4	16	12	0	32	13.6	LARGE DV WERE IN A RUN
MANSON	890914	3	26	4	2	70	11	0.5	17	1	1	4	4	3	3	1	1	DV						0.0	BOTTOM OF R3 TO R2
"	"	"	"	"	"	70	"	0.5	"									GR						0.0	NO 0+ OR 1+ FISH
"	"	"	"	"	"	70	"	0.5	"									MW	1	1	0	0	2	5.7	LARGE VACANT NICHE
"	"	"	"	"	"	70	"	0.5	"									RB						0.0	NEARLY BARREN

SNORKEL SURVEY SUMMARY WILLISTON RESERVOIR TRIBUTARIES

STREAM	DATE		WET		NO	%	WATER	SURV	REACH	HABITAT				ADULT				FISH						ESTIMATE	
		REACH	WID	VIS	OB	COV	TEMP	LENG	LENGT	SPAWN		REAR		HOLD		UTILIZ		OBS	0-10	10-30	30-50	50+	TOTAL	NO./KM	COMMENTS
MANSON	890807	4	18	5	2	90	14.5	3	9.8	3	4	3	4	3	4	2	3	CSU	0	0	1	21	22	8.1	2 EXCEPTIONAL HOLDING POOLS
"	"	"	"	"	"	90	"	3	"									DV	0	3	1	8	12	4.4	MOST FISH IN TWO POOLS BRIDGE
"	"	"	"	"	"	90	"	3	"									GR	0	0	0	0	0	0.0	POOL 30%,R 10,G 40, RN 20
"	"	"	"	"	"	90	"	3	"									MW	43	390	160	0	593	219.6	
"	"	"	"	"	"	90	"	3	"									RB	9	13	0	0	22	8.1	
MANSON	890808	4&5	18	3	2	67	15.5	2.5	15.9	1	1	2	2	3	4	2	2	DV	0	1	6	3	10	6.0	55%G,35RG,10 P
"	"	"	"	"	"	67	"	2.5	"									GR	0	0	0	0	0	0.0	LOD IN POOLS &RRN : MANY P&RN
"	"	"	"	"	"	67	"	2.5	"									LSU	0	0	1	0	1	0.6	COLDER NO FISH AT CONFLUENCE
"	"	"	"	"	"	67	"	2.5	"									MW	49	75	36	3	163	97.3	
"	"	"	"	"	"	67	"	2.5	"									RB	6	7	9	1	23	13.7	
MANSON	890809	6	17	4	2	90	15.5	3	3.5	2	2	4	5	3	3	2	2	CC	1	0	0	0	1	0.4	MOST ADULTS IN DEBRIS JAMS
"	"	"	"	"	"	90	"	3	"									DV	0	3	2	1	6	2.2	DEB JAMS 150M LONG
"	"	"	"	"	"	90	"	3	"									GR	0	0	0	0	0	0.0	GOOD PARR REARING HABITAT
"	"	"	"	"	"	90	"	3	"									LSU	0	1	0	0	1	0.4	REACH IS UNDERSEEDED
"	"	"	"	"	"	90	"	3	"									MW	81	37	109	0	227	84.1	
"	"	"	"	"	"	90	"	3	"									RB	60	25	1	0	86	31.9	
MANSON	890809	8	19	4	2	75	20	0.5	1.6	2	2	4	4	2	3	2	2	CC	1	0	0	0	1	2.7	GOOD PARR REARING HABITAT
"	"	"	"	"	"	75	"	0.5	"									CSU	0	0	1	3	4	10.7	ADULT HOLDING LIMITED
"	"	"	"	"	"	75	"	0.5	"									DV	0	0	0	0	0	0.0	SWIM INCLUDE 2 LAKE SECTIONS
"	"	"	"	"	"	75	"	0.5	"									GR					0	0.0	GOOD OVERSTREAM COVER
"	"	"	"	"	"	75	"	0.5	"									MW	75	175	6	0	256	682.7	SPAWN HABITAT LIMITED
"	"	"	"	"	"	75	"	0.5	"									NSC	0	0	2	0	2	5.3	FINES MIXED WITH GRAVEL
"	"	"	"	"	"	75	"	0.5	"									RB	90	25	1	0	116	309.3	RB ASSOC WITH LOD
MANSON	910709	1.5-3	25	2.5	2	50	15	15.8	20	1		3		4		2		CSU	1	4	95	0	100	12.7	DV.. POOLS & DEEP GLIDES
"	"	"	"	"	"	50	"	15.8	"	"	"	"	"	"	"	"	"	DV	2	2	15	5	24	3.0	MOD TO HIGH INVERTEBRATES
"	"	"	"	"	"	50	"	15.8	"	"	"	"	"	"	"	"	"	GR	0	0	0	0	0	0.0	AND ALGAE
"	"	"	"	"	"	50	"	15.8	"	"	"	"	"	"	"	"	"	MW	259	178	0	0	437	55.3	
"	"	"	"	"	"	50	"	15.8	"	"	"	"	"	"	"	"	"	NSC	0	0	51	0	51	6.5	
"	"	"	"	"	"	50	"	15.8	"	"	"	"	"	"	"	"	"	RB	22	11	11	0	44	5.6	
MANSON	910709	3	30	2.5	2	50	15	13	17	3	2	2	3	3	3	2	2	CSU	0	0	0	73	73	11.2	UPPER HALF V/GOOD SPAWNING
"	"	"	"	"	"	50	"	13	"	"	"	"	"	"	"	"	"	DV	0	0	2	3	5	0.8	LOWER HALF COBBLE LOW POT.
"	"	"	"	"	"	50	"	13	"	"	"	"	"	"	"	"	"	GR	0	0	0	0	0	0.0	VERY FEW FISH
"	"	"	"	"	"	50	"	13	"	"	"	"	"	"	"	"	"	MW	123	277	0	0	400	61.5	GLIDE DOMINANT HAB TYPE
"	"	"	"	"	"	50	"	13	"	"	"	"	"	"	"	"	"	NSC	0	0	0	1	1	0.2	RB IN POOLS AND LOD
"	"	"	"	"	"	50	"	13	"	"	"	"	"	"	"	"	"	RB	1	22	2	0	25	3.8	HIGH ALGAE INVERT MOD

SNORKEL SURVEY SUMMARY WILLISTON RESERVOIR TRIBUTARIES

STREAM	DATE		WET		NO.	%	WATER	SURV	REACH	HABITAT				ADULT				FISH						ESTIMATE	
		REACH	WID	VIS	OB	COV	TEMP	LENG	LENGT	SPAWN		REAR		HOLD		UTILIZ		OBS	0-10	10-30	30-50	50+	TOTAL	NO./KM	COMMENTS
MANSON	910708	5&6	20	2.5	2	50	15	13	16	4		3		4		2		LSU	2	39	33	0	74	11.4	
"	"	"	"	"	"	50	"	13	"	"	"	"	"	"	"	"	"	DV	0	4	5	1	10	1.5	
"	"	"	"	"	"	50	"	13	"	"	"	"	"	"	"	"	"	GR	0	0	0	0	0	0.0	
"	"	"	"	"	"	50	"	13	"	"	"	"	"	"	"	"	"	MW	76	159	9	0	244	37.5	
"	"	"	"	"	"	50	"	13	"	"	"	"	"	"	"	"	"	NSC	2	4	0	0	6	0.9	
"	"	"	"	"	"	50	"	13	"	"	"	"	"	"	"	"	"	RB	9	29	1	0	39	6.0	
MANSON	910708	6	14	2.5	2	40	13.5	2.8	3.5	2	3	3		3		3		LSU	0	0	0	0	0	0.0	
"	"	"	"	"	"	40	"	2.8	"	"	"	"	"	"	"	"	"	DV	0	0	0	2	2	1.8	
"	"	"	"	"	"	40	"	2.8	"	"	"	"	"	"	"	"	"	GR	0	0	0	0	0	0.0	
"	"	"	"	"	"	40	"	2.8	"	"	"	"	"	"	"	"	"	MW	43	95	2	0	140	125.0	
"	"	"	"	"	"	40	"	2.8	"	"	"	"	"	"	"	"	"	NSC	0	0	0	0	0	0.0	
"	"	"	"	"	"	40	"	2.8	"	"	"	"	"	"	"	"	"	RB	2	27	0	0	29	25.9	
MANSON	910709	10	15	2.5	2	50	15	1.1	1.1	4		4		4		3		LSU	0	0	1	0	1	1.8	
"	"	"	"	"	"	50	"	1.1	"	"	"	"	"	"	"	"	"	DV	0	3	1	0	4	7.3	
"	"	"	"	"	"	50	"	1.1	"	"	"	"	"	"	"	"	"	GR	0	0	0	0	0	0.0	
"	"	"	"	"	"	50	"	1.1	"	"	"	"	"	"	"	"	"	MW	55	57	3	0	115	209.1	
"	"	"	"	"	"	50	"	1.1	"	"	"	"	"	"	"	"	"	NSC	0	0	0	0	0	0.0	
"	"	"	"	"	"	50	"	1.1	"	"	"	"	"	"	"	"	"	RB	21	25	5	0	51	92.7	
NABESCHE	910812	1	18	2	2	40	10	0.58	3.3	2	2	3	3	3	4	2	3	DV	0	2	0	0	2	8.6	HIGH INVERTEBRATE NUMBERS
"	"	"	"	"	"	40	"	0.58	"									LW	0	205	0	0	205	883.6	
"	"	"	"	"	"	40	"	0.58	"									MW	7	38	0	0	45	194.0	
"	"	"	"	"	"	40	"	0.58	"									RB	0	13	1	0	14	60.3	
NABESCHE	910810	2	25	2	2	40	12.5	0.12	8.3	1	1	3	3	4	5	3	3	DV	0	1	1	8	10	208.3	BASE OF FALLS TO 120 M. D/S
"	"	"	"	"	"	40	"	0.12	"									MW	0	11	0	0	11	229.2	
"	"	"	"	"	"	40	"	0.12	"									RB	0	2	0	0	2	41.7	
NABESCHE	910809	3	35	2.5	2	40	9	2.1	9.4	1	2	3	3	2	2	1	1	NONE	0	0	0	0	0	0.0	HIGH INVERTEBRATE NUMBERS
NABESCHE	910810	3	30	2	2	60	12.5	2.4	9.4	3	3	3	3	2	3	1	1	NONE	0	0	0	0	0	0.0	HIGH INVERTEBRATE NUMBERS
NABESCHE	910809	4	20	3	2	50	9	0.8	1.7	1	1	2	2	3	3	2	2	DV	2	5	2	0	9	22.5	DV IN POOLS & BOULDER RIFFLE

SNORKEL SURVEY SUMMARY WILLISTON RESERVOIR TRIBUTARIES

STREAM	DATE	REACH	WET WID	VIS	NO OB	% COV	WATER TEMP	SURV LENG	REACH LENG	HABITAT SPAWN		REAR		ADULT HOLD		UTILIZ		FISH OBS	0-10	10-30	30-50	50+	TOTAL	ESTIMATE NO./KM	COMMENTS
NATION	890803	1	50	5	2	60	19	6.25	12.1	1	1	2	3	2	3	2	2	DV	0	1	0	0	1	0.3	SPAWNING HABITAT VERY LOW
*	*	*	*	*	*	60	*	6.25	*									GR	0	8	3	0	11	2.9	INVERTEBRATES LOW TO MODERATE
*	*	*	*	*	*	60	*	6.25	*									LNC	1	0	0	0	1	0.3	AG & RB CONDITION FACTOR HIGH
*	*	*	*	*	*	60	*	6.25	*									MW	91	45	17	0	153	40.8	ALGAE ON ROCKS SILT IN POOLS
*	*	*	*	*	*	60	*	6.25	*									NSC	0	0	10	0	10	2.7	AG IN GLIDE TAILOUTS
*	*	*	*	*	*	60	*	6.25	*									RB	0	1	13	1	15	4.0	80%GLIDE,10%POOL,10%RIFFLE
*	*	*	*	*	*	60	*	6.25	*									SU	0	0	9	0	9	2.4	
NATION	890806	1	65	2	1	5	19	0.1	12.3	1		2		4			2	CSU	0	0	4	0	4	800.0	
*	*	*	*	*	*	5	*	0.1	*									DV	0	3	0	0	3	600.0	SNORKLED IN POOL BELOW FALLS
*	*	*	*	*	*	5	*	0.1	*									GR					0	0.0	
*	*	*	*	*	*	5	*	0.1	*									MW	0	3	0	0	3	600.0	
*	*	*	*	*	*	5	*	0.1	*									RB	0	0	0	0	0	0.0	AREA GETS HIGH FISHING PRES
NATION	890804	2	50	4	1	45	18.5	3.75	4.3	1		2		5		2		CSU	0	32	35	14	81	48.0	LIMITED SPAWNING HABITAT
*	*	*	*	*	*	45	*	3.75	*									DV	0	13	0	1	14	8.3	AG IN GLIDE TAILOUTS
*	*	*	*	*	*	45	*	3.75	*									GR	2	12	1	0	15	8.9	EXCELLENT POOL HABITAT
*	*	*	*	*	*	45	*	3.75	*									LNC	12	1	0	0	13	7.7	GOOD ADULT HOLDING HABITAT
*	*	*	*	*	*	45	*	3.75	*									LSU	0	0	0	0	0	0.0	SOME 0-10 MW MAY BE AG
*	*	*	*	*	*	45	*	3.75	*									MW	60	248	26	0	334	197.9	INVERTEBRATES LOW TO MODERATE
*	*	*	*	*	*	45	*	3.75	*									NSC	0	1	1	0	2	1.2	
*	*	*	*	*	*	45	*	3.75	*									RB	18	122	8	0	148	87.7	LIMITED ACCESS FOR ANGLING
NATION	890804	3	55	4	1	38	19	2.5	7.75	1	2	1		1		3		CSU	0	0	26	119	144	151.6	95% OF FISH WERE AT MOUTH OF
*	*	*	*	*	*	38	*	2.5	*									DV	0	0	0	8	8	8.4	PHILIP CK. TO 150 M. D/S
*	*	*	*	*	*	38	*	2.5	*									GR	0	6	10	0	16	16.9	INVERTEBRATES LOW TO MODERATE
*	*	*	*	*	*	38	*	2.5	*									LSU	0	0	0	0	0	0.0	SOME SMALL MW MAY BE AG
*	*	*	*	*	*	38	*	2.5	*									LT	0	0	0	1	1	1.1	DV & AG HIGH CONDITION FACTOR
*	*	*	*	*	*	38	*	2.5	*									MW	29	41	1	0	71	74.7	90%GLIDE,9%RIFFLE,1%POOL AT
*	*	*	*	*	*	38	*	2.5	*									NSC	0	0	1	0	1	1.1	MOUTH OF PHILIP CK
*	*	*	*	*	*	38	*	2.5	*									RB	10	10	1	0	21	22.1	
PESIKA	890925	1&2	20	1.5	2	20	9	2.6	7.6	4		4		4		2		DV	0	0	0	6	6	11.5	ALL FISH WERE OBSERVED IN R2
*	*	*	*	*	*	20	*	2.6	*									GR						0.0	FISH IN CANYON R2
*	*	*	*	*	*	20	*	2.6	*									MW						0.0	EXCELLENT FRY HABITAT IN R1
*	*	*	*	*	*	20	*	2.6	*									RB	0	1	0	0	1	1.9	
PHILIP	890802	1	16	3	2	90	15	0.1	7.8	1		2		5		3		DV	0	0	0	0	0	0.0	SWAM POOL BELOW FALLS
*	*	*	*	*	*	90	*	0.1	*									GR					0	0.0	FALLS PROBABLY A BARRIER TO
*	*	*	*	*	*	90	*	0.1	*									LNC						0.0	COARSE FISH AND SMALL
*	*	*	*	*	*	90	*	0.1	*									MW	0	8	14	0	22	244.4	SALMONIDS
*	*	*	*	*	*	90	*	0.1	*									RB	0	5	1	0	6	66.7	EP GR AT TAIL OF POOL

ADULT AGE DATA

KEY FOR ADULT AGE DATA WILLISTON WATERSHED STREAMS

SPECIES CODE	LENGTH (mm)	WEIGHT (g)	AGE Yr	AGEING METHOD	CAPTURE METHOD	DATE SAMPLED			SYSTEM	COMMENTS
						DY	MO	YR		
1	2	3	4	5	6	7	8	9	10	11

1. "SPECIES CODE"- Species of fish. Abbreviated utilizing the "Fish Habitat Inventory & Information Program" guide lines.

2. "LENGTH"- Fork length of fish sampled, (mm.)

3. "WEIGHT"- Weight of fish sampled, (g.)

4. "AGE"- Age of fish (years) at time of capture.

5. "AGEING METHOD"- Method used to determine fish age. SC-scale, OT-otolith, FR-fin ray

6. "CAPTURE METHOD"- AL-denotes angling, TU-denotes upstream trap, TO-denotes downstream trap

7.-9. "DATE SAMPLED"- Day month year. Date sampled is identical to the date captured.

10. "SYSTEM"- Stream name. (Gazetted or alias)

11. "COMMENTS"- General location information.

ADULT AGE DATA WILLISTON WATERSHED STREAMS

SPECIES	LENGTH	WEIGHT	AGE		CAPTURE	DATE SAMPLE				
CODE	(mm)	(g)	Yr	METHOD	METHOD	DY	MO	YR	SYSTEM	COMMENTS
DV	280	165	3	SC	AL	5	7	89	CARBON	REACH 2
DV	290	260	3	SC	AL	5	7	89	CARBON	REACH 2
DV	375	440	5	SC	AL	5	7	89	CARBON	REACH 1
DV	230	80	2	SC	AL	23	8	91	CARBON	REACH 3
DV	260	160	4	FR	AL	22	8	91	CARBON	REACH 1
DV	315	350	4	SC,FR	AL	23	8	91	CARBON	REACH 3
DV	330	440	4	SC,FR	AL	23	8	91	CARBON	REACH 3
DV	410	600	5	FR	AL	22	8	91	CARBON	REACH 1
DV	200	198		SC	AL	26	6	92	CARBON	
DV	260	170		SC	AL	26	6	92	CARBON	
GR	400	660	6	SC	AL	5	7	89	CARBON	REACH 1
MW	276	269	4	SC	AL	5	7	89	CARBON	REACH 1
MW	340	475	5	SC	AL	5	7	89	CARBON	REACH 1
RB	188	150	2	SC	AL	15	8	90	CARBON	REACH 3
RB	240	180	3	SC	AL	14	8	90	CARBON	REACH 3
RB	255	250	3	SC	AL	15	8	90	CARBON	REACH 3
RB	350	650	4	SC	AL	15	8	90	CARBON	REACH 3
RB	210	75	2	SC	AL	22	8	91	CARBON	REACH 1
RB	220	70	-	SC	AL	23	8	91	CARBON	REACH 3 1991 HATCHERY FISH
RB	250	140	3	SC	AL	23	8	91	CARBON	REACH 3
RB	265	240		SC	AL	23	8	91	CARBON	REACH 5 1990 HATCHERY FISH
RB	270	225	3	SC	AL	21	8	91	CARBON	REACH 1
RB	270	275	2	SC	AL	27	8	91	CARBON	REACH 1 1990 HATCHERY FISH
RB	275	240	2	SC	AL	23	8	91	CARBON	REACH 5 1990 HATCHERY FISH
RB	280	360	3	SC	AL	23	8	91	CARBON	REACH 3
RB	284	260	3	SC	AL	19	7	91	CARBON	REACH 1
RB	295	260	4	SC	AL	19	7	91	CARBON	REACH 1
RB	309	340	4	SC	AL	20	7	91	CARBON	REACH 1
RB	315	150	4	SC	AL	20	7	91	CARBON	REACH 1
RB	335	525	5	SC	AL	19	7	91	CARBON	REACH 1
RB	279	255		SC	AL	26	6	92	CARBON	HATCHERY FISH
DV	390	590	5	SC	AL	27	8	89	CHOWIKA	FINLAY REACH TRIB
DV	395	620	8	OT	AL	27	8	89	CHOWIKA	FINLAY REACH TRIB
DV	405	630	8	OT	AL	27	8	89	CHOWIKA	FINLAY REACH TRIB
DV	420	600	6	SC	AL	27	8	89	CHOWIKA	FINLAY REACH TRIB
DV	440	850	6	SC	AL	27	8	89	CHOWIKA	FINLAY REACH TRIB
DV	470	1020	7	SC	AL	27	8	89	CHOWIKA	FINLAY REACH TRIB
DV	470	1100	7	OT	AL	27	8	89	CHOWIKA	FINLAY REACH TRIB
DV	480	1090	7	OT	AL	27	8	89	CHOWIKA	FINLAY REACH TRIB
DV	480	1190	7	OT	AL	27	8	89	CHOWIKA	FINLAY REACH TRIB
DV	520	1320	7	OT	AL	27	8	89	CHOWIKA	FINLAY REACH TRIB
DV	520	1210	10	OT	AL	27	8	89	CHOWIKA	FINLAY REACH TRIB
DV	550	1420	9	OT	AL	27	8	89	CHOWIKA	FINLAY REACH TRIB
DV	635	2100	10	OT	AL	27	8	89	CHOWIKA	FINLAY REACH TRIB
DV	640	2190	9	OT	AL	27	8	89	CHOWIKA	FINLAY REACH TRIB
DV	660	2600	10	OT	AL	27	8	89	CHOWIKA	FINLAY REACH TRIB
DV	680	3500	8	OT	AL	27	8	89	CHOWIKA	FINLAY REACH TRIB
DV	705	3600	12	OT	AL	27	8	89	CHOWIKA	FINLAY REACH TRIB
DV	790	4400	11	OT	AL	27	8	89	CHOWIKA	FINLAY REACH TRIB
RB	395	600	6	SC	AL	27	8	89	CHOWIKA	FINLAY REACH TRIB
DV	400	700	8	OT	AL	29	8	89	DAVIS	FINLAY REACH TRIB

ADULT AGE DATA WILLISTON WATERSHED STREAMS

SPECIES CODE	LENGTH (mm)	WEIGHT (g)	AGE Yr	METHOD	CAPTURE METHOD	DATE SAMPLE DY	MO	YR	SYSTEM	COMMENTS
DV	420	600	10	OT	AL	29	8	89	DAVIS	FINLAY REACH TRIB
DV	420	660	4	SC	AL	26	8	89	DAVIS	CAUGHT RIVER MOUTH
DV	430	680	5	OT	AL	1	9	89	DAVIS	CAUGHT UPPER R1
DV	500	1380	8	OT	AL	29	8	89	DAVIS	FINLAY REACH TRIB
DV	540	2000	8	OT	AL	29	8	89	DAVIS	FINLAY REACH TRIB
DV	580	1200	9	OT	AL	29	8	89	DAVIS	FINLAY REACH TRIB
DV	640	2400	10	OT	AL	1	9	89	DAVIS	CAUGHT UPPER R1
DV	640	7000	12	OT	AL	29	8	89	DAVIS	FINLAY REACH TRIB
DV	760	3800	12	OT	AL	1	9	89	DAVIS	CAUGHT UPPER R1
DV	775	4500	12	OT	AL	1	9	89	DAVIS	CAUGHT UPPER R1
DV	790	4700	13	OT	AL	1	9	89	DAVIS	CAUGHT UPPER R1
DV	813	5000	13	OT	AL	26	8	89	DAVIS	FINLAY REACH TRIB
RB	300	400	3	SC	AL	1	9	89	DAVIS	CAUGHT UPPER R1
RB	340	480	4	SC	AL	30	8	89	DAVIS	CAUGHT UPPER R1
RB	270	130	5	OT	TO	14	7	89	DUNLEVY	DUNLEVY ADULT TRAP D
DV	216	95	3	OT	TU	13	7	89	DUNLEVY	DUNLEVY ADULT TRAP U
DV	224	80	3	OT	TO	3	8	89	DUNLEVY	DUNLEVY ADULT TRAP D
DV	231	120	4	OT	TO	22	6	89	DUNLEVY	DUNLEVY ADULT TRAP D
DV	241	160	5	OT	TO	28	5	89	DUNLEVY	DUNLEVY ADULT TRAP D
DV	243	85	3	OT	TO	22	6	89	DUNLEVY	DUNLEVY ADULT TRAP D
DV	257	130	5	OT	TO	24	6	89	DUNLEVY	DUNLEVY ADULT TRAP D
DV	267		6	OT	TO	15	6	89	DUNLEVY	DUNLEVY ADULT TRAP D
DV	283	205	5	OT	TO	1	8	89	DUNLEVY	DUNLEVY ADULT TRAP D
DV	245	170		SC	ES	24	6	92	DUNLEVY	
DV	246	113		SC	ES	24	6	92	DUNLEVY	
DV	271	198		SC	ES	24	6	92	DUNLEVY	
DV	275	227		SC	ES	24	6	92	DUNLEVY	
DV	277	198		SC	ES	24	6	92	DUNLEVY	
DV	280	198		SC	ES	23	6	92	DUNLEVY	
DV	284	170		SC	ES	23	6	92	DUNLEVY	
DV	293	198		SC	ES	23	6	92	DUNLEVY	
DV	298	198		SC	ES	24	6	92	DUNLEVY	
DV	302	255		SC	ES	23	6	92	DUNLEVY	
DV	306	284		SC	ES	24	6	92	DUNLEVY	
DV	306	284		SC	ES	24	6	92	DUNLEVY	
DV	310	312		SC	ES	23	6	92	DUNLEVY	
DV	313	340		SC	ES	23	6	92	DUNLEVY	
DV	313	255		SC	ES	24	6	92	DUNLEVY	
DV	315	284		SC	ES	24	6	92	DUNLEVY	
DV	318	312		SC	ES	24	6	92	DUNLEVY	
DV	320	284		SC	ES	24	6	92	DUNLEVY	
DV	320	255		SC	ES	23	6	92	DUNLEVY	
DV	322	340		SC	ES	24	6	92	DUNLEVY	
DV	327	397		SC	ES	24	6	92	DUNLEVY	
DV	330	369		SC	ES	23	6	92	DUNLEVY	
DV	330	369		SC	ES	23	6	92	DUNLEVY	
DV	338	340		SC	ES	24	6	92	DUNLEVY	
DV	349	340		SC	ES	24	6	92	DUNLEVY	
DV	380	454		SC	ES	23	6	92	DUNLEVY	
DV	405	398		SC	ES	23	6	92	DUNLEVY	
RB	[illegible]	213		SC	ES	24	6	92	DUNLEVY	

ADULT AGE DATA WILLISTON WATERSHED STREAMS

SPECIES CODE	LENGTH (mm)	WEIGHT (g)	AGE Yr	METHOD	CAPTURE METHOD	DATE SAMPLE DY	MO	YR	SYSTEM	COMMENTS
RB	200	113		SC	ES	24	6	92	DUNLEVY	
RB	230	227		SC	ES	23	6	92	DUNLEVY	
RB	230	170		SC	ES	23	6	92	DUNLEVY	
RB	240	142		SC	ES	23	6	92	DUNLEVY	
RB	242	142		SC	ES	23	6	92	DUNLEVY	FEAMLE - MT
RB	245	170		SC	ES	24	6	92	DUNLEVY	SILVER BRIGHT
RB	250	142		SC	ES	23	6	92	DUNLEVY	FEMALE - 50% SPENT
RB	254	198		SC	ES	24	6	92	DUNLEVY	SILVER BRIGHT
RB	270	198		SC	ES	24	6	92	DUNLEVY	
RB	271	227		SC	ES	24	6	92	DUNLEVY	SILVER BRIGHT
RB	277	198		SC	ES	23	6	92	DUNLEVY	MALE - SPENT
RB	284	198		SC	ES	24	6	92	DUNLEVY	SILVER BRIGHT
RB	290	284		SC	ES	24	6	92	DUNLEVY	SILVER BRIGHT
RB	290	255		SC	ES	23	6	92	DUNLEVY	FEMALE - SPENT
RB	291	312		SC	ES	24	6	92	DUNLEVY	SILVER BRIGHT
RB	291	227		SC	ES	23	6	92	DUNLEVY	FEMALE - GRAVID
RB	293	227		SC	ES	23	6	92	DUNLEVY	SPENT
RB	294	227		SC	ES	24	6	92	DUNLEVY	HATCHERY FISH
RB	295	340		SC	ES	24	6	92	DUNLEVY	SILVER BRIGHT
RB	299	284		SC	ES	24	6	92	DUNLEVY	SILVER BRIGHT
RB	300	312		SC	ES	24	6	92	DUNLEVY	SILVER BRIGHT
RB	300	255		SC	ES	23	6	92	DUNLEVY	FEMALE - SPENT
RB	300	255		SC	ES	24	6	92	DUNLEVY	SILVER BRIGHT
RB	303	255		SC	ES	24	6	92	DUNLEVY	
RB	309	284		SC	ES	23	6	92	DUNLEVY	MALE - GRAVID
RB	311	227		SC	ES	23	6	92	DUNLEVY	FEMALE - SPENT
RB	315	255		SC	ES	23	6	92	DUNLEVY	HATCHERY FISH - MALE
RB	318	227		SC	ES	23	6	92	DUNLEVY	FEMALE - 50% SPENT
RB	318	369		SC	ES	24	6	92	DUNLEVY	SILVER BRIGHT
RB	320	255		SC	ES	23	6	92	DUNLEVY	MALE - GRAVID
RB	329	255		SC	ES	24	6	92	DUNLEVY	MALE - SPENT
RB	332	284		SC	ES	23	6	92	DUNLEVY	MALE - SPENT
RB	352	397		SC	ES	24	6	92	DUNLEVY	
RB	140		2	SC	AL	8	7	91	MANSON	BETWEEN THE LAKES
RB	165		2	SC	AL	8	7	91	MANSON	BETWEEN THE LAKES
RB	170		2	SC	AL	7	7	91	MANSON	BETWEEN THE LAKES
RB	180	35	2	SC	AL	8	7	91	MANSON	BETWEEN THE LAKES
RB	195		3	SC	AL	7	7	91	MANSON	BETWEEN THE LAKES
RB	207		2	SC	AL	8	7	91	MANSON	BETWEEN THE LAKES
RB	225	45	3	SC	AL	8	7	91	MANSON	BETWEEN THE LAKES
RB	270	140	4	SC	AL	7	7	91	MANSON	BETWEEN THE LAKES
RB	318	310	4	SC	AL	7	7	91	MANSON	BETWEEN THE LAKES
RB	320	210	4	SC	AL	7	7	91	MANSON	BETWEEN THE LAKES
RB	395	310	5	SC	AL	7	7	91	MANSON	BETWEEN THE LAKES
DV	340	340	3	SC	AL	19	9	90	MESILINKA	
DV	370	460	3	SC	AL	19	9	90	MESILINKA	
DV	380	500	3	SC	AL	19	9	90	MESILINKA	
DV	390	555	4	FR	AL	19	9	90	MESILINKA	MOUSE IN STOMACH
DV	400	570	3	SC	AL	19	9	90	MESILINKA	
DV	410	660	4	FR	AL	19	9	90	MESILINKA	
DV	410	670	4	SC	AL	19	9	90	MESILINKA	

ADULT AGE DATA WILLISTON WATERSHED STREAMS

SPECIES CODE	LENGTH (mm)	WEIGHT (g)	AGE Yr	METHOD	CAPTURE METHOD	DATE SAMPLE DY	MO	YR	SYSTEM	COMMENTS
DV	415	500	4	SC	AL	19	9	90	MESILINKA	
DV	440	840		FR	AL	20	9	90	MESILINKA	
DV	470	850	4	SC	AL	19	9	90	MESILINKA	
DV	510	1250		SC	AL	19	9	90	MESILINKA	
DV	510	1200		SC	AL	19	9	90	MESILINKA	
DV	515	1400	5	FR	AL	20	9	90	MESILINKA	
DV	560	1720	4	SC	AL	18	9	90	MESILINKA	
DV	560	1600	5	FR	AL	20	9	90	MESILINKA	
DV	620	1900	8	FR	AL	19	9	90	MESILINKA	
DV	440	1000		SC	AL	4	8	91	MESILINKA	LOWER RIVER SITE
DV	450	700		SC	AL	4	8	91	MESILINKA	LOWER RIVER SITE
DV	280	210		SC,FR	GN	4	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
DV	287	198		SC	GN	4	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
DV	318	300		SC	GN	6	7	92	MESILINKA	SITE #2-EMBAYMENT STUDY
DV	321	300		SC,FR	GN	4	7	92	MESILINKA	SITE #1-FEMALE MORT-EMBAYMENT STUDY
DV	387	539		SC,FR	GN	4	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
DV	405	539		SC,FR	GN	4	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
GR	240	200	3	SC	AL	19	9	90	MESILINKA	
GR	270	240	3	SC	AL	19	9	90	MESILINKA	
GR	280	185	3	SC	AL	19	9	90	MESILINKA	
GR	280	240	3	SC	AL	19	9	90	MESILINKA	
GR	280	280	3	SC	AL	20	9	90	MESILINKA	
GR	300	320	4	SC	AL	20	9	90	MESILINKA	
GR	310	300	4	SC	AL	19	9	90	MESILINKA	
GR	310	250	4	SC	AL	19	9	90	MESILINKA	
GR	310	400	4	SC	AL	19	9	90	MESILINKA	
GR	320	335	4	SC	AL	20	9	90	MESILINKA	
GR	320	395	4	SC	AL	20	9	90	MESILINKA	
GR	330	380	5	SC	AL	19	9	90	MESILINKA	
GR	340	500	7	SC	AL	19	9	90	MESILINKA	
GR	350	500	6	SC	AL	20	9	90	MESILINKA	
GR	350	500	6	SC	AL	20	9	90	MESILINKA	
GR	360	500	5	SC	AL	19	9	90	MESILINKA	
GR	375	550	7	SC	AL	19	9	90	MESILINKA	
GR	380	600		SC	AL	20	9	90	MESILINKA	
GR	390	660	7	SC	AL	20	9	90	MESILINKA	
GR	180	100	2	SC	AL	24	8	91	MESILINKA	MID RIVER SITE
GR	190	90	2	SC	AL	3	8	91	MESILINKA	LOWER RIVER SITE
GR	205		2	SC	AL	4	8	91	MESILINKA	LOWER RIVER SITE
GR	210	160	2	SC	AL	30	8	91	MESILINKA	MID RIVER SITE
GR	210	120	2	SC	AL	20	8	91	MESILINKA	MID RIVER SITE
GR	240	210	3	SC	AL	24	8	91	MESILINKA	MID RIVER SITE
GR	260	230	3	SC	AL	24	8	91	MESILINKA	MID RIVER SITE
GR	260	250	3	SC	AL	24	8	91	MESILINKA	MID RIVER SITE
GR	300	310	3	SC	AL	30	8	91	MESILINKA	MID RIVER SITE
GR	305	400	4	SC	AL	24	8	91	MESILINKA	MID RIVER SITE
GR	380	750	7	SC	AL	30	8	91	MESILINKA	MID RIVER SITE
LNS	206	113		SC	GN	3	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
LNS	247	170		SC	GN	3	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
LNS	251	142		SC	GN	6	7	92	MESILINKA	SITE #2 EMBAYMENT STUDY
LNS	269	227		SC	GN	6	7	92	MESILINKA	SITE #2-EMBAYMENT STUDY

ADULT AGE DATA WILLISTON WATERSHED STREAMS

SPECIES CODE	LENGTH (mm)	WEIGHT (g)	AGE Yr	METHOD	CAPTURE METHOD	DATE SAMPLE DY	MO	YR	SYSTEM	COMMENTS
LNS	270	227		SC	GN	6	7	92	MESILINKA	SITE #2-EMBAYMENT STUDY
LNS	283	284		SC	GN	4	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
LNS	285	240		SC	GN	6	7	92	MESILINKA	SITE #2-EMBAYMENT STUDY
LNS	287	255		SC	GN	6	7	92	MESILINKA	SITE #2 EMBAYMENT STUDY
LNS	289	312		SC	GN	6	7	92	MESILINKA	SITE #2-EMBAYMENT STUDY
LNS	293	227		SC	GN	6	7	92	MESILINKA	SITE #2-EMBAYMENT STUDY
LNS	296	312		SC	GN	3	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
LNS	304	284		SC	GN	3	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
LNS	312	340		SC	GN	6	7	92	MESILINKA	SITE #2 EMBAYMENT STUDY
LNS	313	340		SC	GN	5	7	92	MESILINKA	SITE #2 EMBAYMENT STUDY
LNS	313	325		SC	GN	5	7	92	MESILINKA	SITE #2-EMBAYMENT STUDY
LNS	313	255		SC	GN	3	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
LNS	322	340		SC	GN	3	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
LNS	322	340		SC	GN	4	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
LNS	326	340		SC	GN	4	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
LNS	333	380		SC	GN	5	7	92	MESILINKA	SITE #2-EMBAYMENT STUDY
LNS	333	369		SC	GN	6	7	92	MESILINKA	SITE #2-EMBAYMENT STUDY
LNS	339	397		SC	GN	3	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
LNS	343	455		SC	GN	4	7	92	MESILINKA	SITE #1-WHITE CYSTS ON TAIL-EMBAYMENT STUD
LNS	348	465		SC	GN	6	7	92	MESILINKA	SITE #2-EMBAYMENT STUDY
LNS	349	425		SC	GN	6	7	92	MESILINKA	SITE #2 EMBAYMENT STUDY
LNS	349	482		SC	GN	3	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
LNS	351	425		SC	GN	3	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
LNS	352	465		SC	GN	6	7	92	MESILINKA	SITE #2-LESIONS/SORES ON BODY-EMBAYMENT ST
LNS	358	472		SC	GN	4	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
LNS	360	425		SC	GN	3	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
LNS	365	511		SC	GN	4	7	92	MESILINKA	SITE #1 EMBAYMENT STUDY
LNS	366	511		SC	GN	4	7	92	MESILINKA	SITE #1 EMBAYMENT STUDY
LNS	369	624		SC	GN	6	7	92	MESILINKA	SITE #2-EMBAYMENT STUDY
LNS	370	567		SC	GN	4	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
LNS	373	525		SC	GN	6	7	92	MESILINKA	SITE #2 EMBAYMENT STUDY
LNS	378	539		SC	GN	4	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
LNS	425	654		SC	GN	6	7	92	MESILINKA	SITE #2-EMBAYMENT STUDY
LSS	360	511		SC	GN	3	7	92	MESILINKA	SITE #1 EMBAYMENT STUDY
LSS	449	1077		SC	GN	4	7	92	MESILINKA	SITE #1 EMBAYMENT STUDY
LW	245	155		SC	GN	4	7	92	MESILINKA	SITE #1 EMBAYMENT STUDY
LW	253	170		SC	GN	4	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
LW	275	255		SC	GN	4	7	92	MESILINKA	SITE #1 EMBAYMENT STUDY
LW	284	227		SC	GN	4	7	92	MESILINKA	SITE #1 EMBAYMENT STUDY
LW	284	284		SC	GN	5	7	92	MESILINKA	SITE #2-EMBAYMENT STUDY
LW	289	198		SC	GN	4	7	92	MESILINKA	SITE #1 EMBAYMENT STUDY
LW	300	227		SC	GN	5	7	92	MESILINKA	SITE #2 EMBAYMENT STUDY
LW	311	198		SC	GN	4	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
MW	280	200	5	SC	AL	4	8	91	MESILINKA	LOWER RIVER SITE
MW	151	85		SC	GN	3	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
NSF	362	482		SC	GN	5	7	92	MESILINKA	SITE #2 EMBAYMENT STUDY
NSF	445	823		SC	GN	3	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
NSF	473	1049		SC	GN	4	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
PMC	202	120		SC	GN	6	7	92	MESILINKA	SITE #2-EMBAYMENT STUDY
PMC	205	85		SC	GN	5	7	92	MESILINKA	SITE #2 EMBAYMENT STUDY
PMC	207	85		SC	GN	4	7	92	MESILINKA	SITE #1 EMBAYMENT STUDY

ADULT AGE DATA WILLISTON WATERSHED STREAMS

SPECIES CODE	LENGTH (mm)	WEIGHT (g)	AGE Yr	METHOD	CAPTURE METHOD	DATE SAMPLE DY	MO	YR	SYSTEM	COMMENTS
PMC	208	85		SC	GN	4	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
PMC	218	142		SC	GN	5	7	92	MESILINKA	SITE #2-EMBAYMENT STUDY
RB	220	150	3	SC	AL	18	9	90	MESILINKA	
RB	220	220	3	SC	AL	20	9	90	MESILINKA	
RB	230	115	2	SC	AL	20	9	90	MESILINKA	
RB	270	240	3	SC	AL	20	9	90	MESILINKA	
RB	280	250	4	SC	AL	19	9	90	MESILINKA	
RB	280	280	4	SC	AL	19	9	90	MESILINKA	
RB	290	240	4	SC	AL	19	9	90	MESILINKA	
RB	300	330	4	SC	AL	20	9	90	MESILINKA	
RB	330	450	3	SC	AL	20	9	90	MESILINKA	
RB	330	480	5	SC	AL	19	9	90	MESILINKA	
RB	350	600	-	SC	AL	20	9	90	MESILINKA	
RB	370	640	5	SC	AL	20	9	90	MESILINKA	
RB	140	-	2	SC	AL	4	8	91	MESILINKA	LOWER RIVER SITE
RB	160	60	2	SC	AL	5	8	91	MESILINKA	LOWER RIVER SITE
RB	170	70	3	SC	AL	5	8	91	MESILINKA	LOWER-RIVER SITE
RB	180	70	2	SC	AL	6	8	91	MESILINKA	LOWER RIVER SITE
RB	190	105	3	SC	AL	24	8	91	MESILINKA	MID RIVER SITE
RB	190	80	2	SC	AL	30	8	91	MESILINKA	MID RIVER SITE
RB	190	-	3	SC	AL	4	8	91	MESILINKA	LOWER-RIVER SITE
RB	190	110	2	SC	AL	6	8	91	MESILINKA	LOWER-RIVER SITE
RB	200	150	3	SC	AL	6	8	91	MESILINKA	LOWER-RIVER SITE
RB	200	110	3	SC	AL	5	8	91	MESILINKA	LOWER-RIVER SITE
RB	200	130	3	SC	AL	6	8	91	MESILINKA	LOWER RIVER SITE
RB	205	115	3	SC	AL	30	8	91	MESILINKA	MID-RIVER SITE
RB	205	115	3	SC	AL	24	8	91	MESILINKA	MID RIVER SITE
RB	210	215	3	SC	AL	24	8	91	MESILINKA	MID-RIVER SITE
RB	220	175	3	SC	AL	5	8	91	MESILINKA	LOWER RIVER SITE
RB	220	130	3	SC	AL	6	8	91	MESILINKA	LOWER-RIVER SITE
RB	220	170	2	SC	AL	6	8	91	MESILINKA	LOWER-RIVER SITE
RB	220	160	2	SC	AL	4	8	91	MESILINKA	LOWER-RIVER SITE
RB	220	235	4	SC	AL	6	8	91	MESILINKA	LOWER-RIVER SITE
RB	230	155	3	SC	AL	24	8	91	MESILINKA	MID RIVER SITE
RB	230	170	3	SC	AL	30	8	91	MESILINKA	MID RIVER SITE
RB	230	200	3	SC	AL	5	8	91	MESILINKA	LOWER RIVER SITE
RB	230	115	3	SC	AL	24	8	91	MESILINKA	MID RIVER SITE
RB	240	205	4	SC	AL	24	8	91	MESILINKA	MID-RIVER SITE
RB		160	3	SC	AL	24	8	91	MESILINKA	MID-RIVER SITE
RB	240	270	-	SC	AL	6	8	91	MESILINKA	LOWER RIVER SITE
RB	240	200	3	SC	AL	6	8	91	MESILINKA	LOWER RIVER SITE
RB	240	220	4	SC	AL	6	8	91	MESILINKA	LOWER RIVER SITE
RB	250	220	3	SC	AL	30	8	91	MESILINKA	MID RIVER SITE
RB	250	220	4	SC	AL	24	8	91	MESILINKA	MID RIVER SITE
RB	260	230	-	SC	AL	30	8	91	MESILINKA	MID-RIVER SITE
RB	260	250	2	SC	AL	5	8	91	MESILINKA	LOWER-RIVER SITE
RB	260	255	4	SC	AL	30	8	91	MESILINKA	MID RIVER SITE
RB	260	300	4	SC	AL	6	8	91	MESILINKA	LOWER-RIVER SITE
RB	260	185	4	SC	AL	30	8	91	MESILINKA	MID-RIVER SITE
RB	265	255	4	SC	AL	30	8	91	MESILINKA	MID RIVER SITE
RB	280	210	3	SC	AL	4	8	91	MESILINKA	LOWER RIVER SITE

ADULT AGE DATA WILLISTON WATERSHED STREAMS

SPECIES CODE	LENGTH (mm)	WEIGHT (g)	AGE Yr	METHOD	CAPTURE METHOD	DATE SAMPLE DY	MO	YR	SYSTEM	COMMENTS
RB	290	310	4	SC	AL	6	8	91	MESILINKA	LOWER-RIVER SITE
RB	300	360	4	SC	AL	24	8	91	MESILINKA	MID RIVER SITE
RB	300	295	3	SC	AL	30	8	91	MESILINKA	MID-RIVER SITE
RB	300	300	-	SC	AL	24	8	91	MESILINKA	MID-RIVER SITE
RB	305	300	5	SC	AL	30	8	91	MESILINKA	MID-RIVER SITE
RB	310	310	4	SC	AL	4	8	91	MESILINKA	LOWER-RIVER SITE
RB	315	400	5	SC	AL	6	8	91	MESILINKA	LOWER-RIVER SITE
RB	320	315	3	SC	AL	24	8	91	MESILINKA	MID-RIVER SITE
RB	360	490		SC	AL	6	8	91	MESILINKA	LOWER-RIVER SITE
RB	360	400	4	SC	AL	5	8	91	MESILINKA	LOWER-RIVER SITE
RB	239	142		SC	GN	4	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
RB	240	198		SC	GN	5	7	92	MESILINKA	SITE #2-EMBAYMENT STUDY
RB	249	142		SC	GN	4	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
RB	261	142		SC	GN	3	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
RB	272	170		SC	GN	4	7	92	MESILINKA	SITE #1-MALE MORT-EMBAYMENT STUDY
RB	280	170		SC	GN	3	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
RB	315	350		SC	GN	5	7	92	MESILINKA	SITE #2-EMBAYMENT STUDY
RB	332	312		SC	GN	3	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
RB	334	312		SC	GN	4	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
WS	357	525		SC	GN	6	7	92	MESILINKA	SITE #2-EMBAYMENT STUDY
WS	364	511		SC	GN	6	7	92	MESILINKA	SITE #2-EMBAYMENT STUDY
WS	375	624		SC	GN	4	7	92	MESILINKA	SITE #1-EMBAYMENT STUDY
DV	155	60	2	SC	AL	11	8	91	NABESCHE	REACH 2
DV	220	110	3	SC	AL	11	8	91	NABESCHE	REACH 4
DV	235	140	3	SC	AL	12	8	91	NABESCHE	REACH 1
DV	240	130	3	FR	AL	11	8	91	NABESCHE	REACH 4
DV	245	100	3	SC	AL	13	8	91	NABESCHE	REACH 5
DV	245	150	3	SC	AL	11	8	91	NABESCHE	REACH 4
DV	260	170	3	SC	AL	12	8	91	NABESCHE	REACH 1
DV	260	150	3	SC	AL	13	8	91	NABESCHE	REACH 5
DV	265	160	3	SC	AL	13	8	91	NABESCHE	REACH 5
DV	270	100	2	SC	AL	12	8	91	NABESCHE	REACH 1
DV	270	150	3	SC	AL	11	8	91	NABESCHE	REACH 2
DV	270	150	4	SC	AL	12	8	91	NABESCHE	REACH 1
DV	270	200	3	SC	AL	13	8	91	NABESCHE	REACH 4
DV	280	175	3	FR	AL	13	8	91	NABESCHE	REACH 4
DV	280	150	4	SC	AL	13	8	91	NABESCHE	REACH 1
DV	285	220	2	SC	AL	13	8	91	NABESCHE	REACH 1
DV	285	140	3	SC	AL	10	8	91	NABESCHE	REACH 2
DV	290	-	4	SC	AL	10	8	91	NABESCHE	REACH 2
DV	290	120	3	SC	AL	13	8	91	NABESCHE	REACH 1
DV	290	190	4	SC	AL	12	8	91	NABESCHE	REACH 1
DV	290	-	4	SC	AL	10	8	91	NABESCHE	REACH 2
DV	295	210	4	FR	AL	13	8	91	NABESCHE	REACH 5
DV	295	220	4	FR	AL	13	8	91	NABESCHE	REACH 5
DV	295	200	3	FR	AL	13	8	91	NABESCHE	REACH 5
DV	295	180	3	SC	AL	12	8	91	NABESCHE	REACH 1
DV	300	150	4	SC	AL	11	8	91	NABESCHE	REACH 2
DV	300	150	4	OT	AL	11	8	91	NABESCHE	REACH 2
DV	300	195	4	FR	AL	11	8	91	NABESCHE	REACH 2
DV	310		3	SC	AL	10	8	91	NABESCHE	REACH 2

ADULT AGE DATA WILLISTON WATERSHED STREAMS

SPECIES CODE	LENGTH (mm)	WEIGHT (g)	AGE Yr	METHOD	CAPTURE METHOD	DATE SAMPLE DY	MO	YR	SYSTEM	COMMENTS
DV	310	175	5	FR	AL	11	8	91	NABESCHE	REACH 2
DV	310	275	4	SC	AL	12	8	91	NABESCHE	REACH 1
DV	310	310	4	FR	AL	13	8	91	NABESCHE	REACH 4
DV	315	275	4	FR	AL	13	8	91	NABESCHE	REACH 3
DV	315	260	3	SC	AL	12	8	91	NABESCHE	REACH 1
DV	320	310	4	FR	AL	13	8	91	NABESCHE	REACH 3
DV	320	-	4	SC	AL	10	8	91	NABESCHE	REACH 2
DV	320	280	3	SC	AL	13	8	91	NABESCHE	REACH 1
DV	320	300	4	FR	AL	13	8	91	NABESCHE	REACH 5
DV	320	200	5	FR	AL	11	8	91	NABESCHE	REACH 2
DV	320	320	4	SC	AL	10	8	91	NABESCHE	REACH 2
DV	325	300	4	SC	AL	13	8	91	NABESCHE	REACH 1
DV	335	350	5	FR	AL	13	8	91	NABESCHE	REACH 4
DV	335	300	4	SC	AL	10	8	91	NABESCHE	REACH 2
DV	340	250	6	FR	AL	11	8	91	NABESCHE	REACH 2
DV	345	290	5	FR	AL	12	8	91	NABESCHE	REACH 1
DV	345	330	4	FR	AL	13	8	91	NABESCHE	REACH 5
DV	345	320			AL	12	8	91	NABESCHE	REACH 1
DV	355	300	6	FR	AL	11	8	91	NABESCHE	REACH 2
DV	370	520	5	FR	AL	12	8	91	NABESCHE	REACH 1
DV	370	410	3	OT	AL	13	8	91	NABESCHE	REACH 5
DV	375	490	4	FR	AL	13	8	91	NABESCHE	REACH 3
DV	380	480	5	FR	AL	13	8	91	NABESCHE	REACH 1
DV	380	450	-	SC	AL	10	8	91	NABESCHE	REACH 2
DV	400	-	5	SC	AL	10	8	91	NABESCHE	REACH 2
DV	410	520	6	FR	AL	13	8	91	NABESCHE	REACH 1
DV	445	1000	6	FR	AL	13	8	91	NABESCHE	REACH 5
DV	450	960	8	FR	AL	11	8	91	NABESCHE	REACH 4
DV	680	2500	8	OT	AL	10	8	91	NABESCHE	REACH 2
DV	725	3750	14	FR	AL	10	8	91	NABESCHE	REACH 2
DV	820	5500	13	FR	AL	10	8	91	NABESCHE	REACH 2
GR	375	440	6	SC	AL	10	8	91	NABESCHE	REACH 2
LW	310	220	3	SC	AL	13	8	91	NABESCHE	REACH 1
MW	325	350	6	SC	AL	11	8	91	NABESCHE	REACH 2
MW	330	360	4	SC	AL	11	8	91	NABESCHE	REACH 1
MW	350	260	6	SC	AL	13	8	91	NABESCHE	REACH 1
MW	355	350	7	SC	AL	13	8	91	NABESCHE	REACH 1
MW	370	420	7	SC	AL	11	8	91	NABESCHE	REACH 2
MW	380	470	7	SC	AL	11	8	91	NABESCHE	REACH 2
RB	270	100	3	SC	AL	11	8	91	NABESCHE	REACH 2
RB	280	240	4	SC	AL	12	8	91	NABESCHE	REACH 1
RB	290	225	3	SC	AL	12	8	91	NABESCHE	REACH 1
RB	300	200	3	SC	AL	11	8	91	NABESCHE	REACH 2
RB	310	250	3	SC	AL	10	8	91	NABESCHE	REACH 2
RB	315	300	3	SC	AL	12	8	91	NABESCHE	REACH 1
RB	320	200	4	SC	AL	10	8	91	NABESCHE	REACH 2
RB	330	340	4	SC	AL	10	8	91	NABESCHE	REACH 2
RB	330	320	3	SC	AL	10	8	91	NABESCHE	REACH 2
RB	335	400	3	SC	AL	10	8	91	NABESCHE	REACH 2
DV	305	300	3	SC	AL	6	8	89	NATION	NATION RIVER FALLS
DV	350	400	4	SC	AL	6	8	89	NATION	NATION RIVER FALLS

ADULT AGE DATA WILLISTON WATERSHED STREAMS

SPECIES	LENGTH	WEIGHT	AGE		CAPTURE	DATE SAMPLE				
CODE	(mm)	(g)	Yr	METHOD	METHOD	DY	MO	YR	SYSTEM	COMMENTS
GR	150	50	1	SC	AL	9	8	89	NATION	NATION MID RIVER
GR	230	150	2	SC	AL	9	8	89	NATION	NATOIN MID RIVER
GR	310	330	5	SC	AL	9	8	89	NATION	NATION MID RIV
GR	310	320	4	SC	AL	9	8	89	NATION	NATION MID RIVER
GR	149	80		SC	AL	23	7	92	NATION	IMM
GR	157	28		SC	AL	21	7	92	NATION	IMM
GR	222	142		SC	AL	20	7	92	NATION	IMM
GR	235	170		SC	AL	21	7	92	NATION	IMM
GR	236	200		SC	AL	23	7	92	NATION	FEMALE
GR	236	170		SC	AL	21	7	92	NATION	IMM
GR	239	210		SC	AL	18	7	92	NATION	MALE
GR	245	220		SC	AL	18	7	92	NATION	IMM
GR	261	227		SC	AL	20	7	92	NATION	
GR	265	255		SC	AL	20	7	92	NATION	FEMALE
GR	267	260		SC	AL	18	7	92	NATION	IMM
GR	268	290		SC	AL	23	7	92	NATION	FEMALE
GR	269	270		SC	AL	20	7	92	NATION	FEMALE
GR	270	260		SC	AL	20	7	92	NATION	
GR	272	280		SC	AL	18	7	92	NATION	MALE
GR	272	227		SC	AL	21	7	92	NATION	FEMALE
GR	273	270		SC	AL	23	7	92	NATION	MALE
GR	273	300		SC	AL	23	7	92	NATION	FEMALE
GR	273	255		SC	AL	21	7	92	NATION	MALE
GR	275	320		SC	AL	20	7	92	NATION	
GR	275	320		SC	AL	16	7	92	NATION	FEMALE
GR	276	300		SC	AL	23	7	92	NATION	FEMALE
GR	278	255		SC	AL	21	7	92	NATION	MALE
GR	278	255		SC	AL	21	7	92	NATION	FEMALE
GR	278	330		SC	AL	20	7	92	NATION	
GR	280	255		SC	AL	21	7	92	NATION	FEMALE
GR	281	320		SC	AL	18	7	92	NATION	FEMALE
GR	283	200		SC	AL	21	7	92	NATION	FEMALE
GR	283	284		SC	AL	21	7	92	NATION	FEMALE
GR	285	315		SC	AL	21	7	92	NATION	MALE
GR	285	330		SC	AL	23	7	92	NATION	FEMALE
GR	289	255		SC	AL	21	7	92	NATION	MALE
GR	290	340		SC	AL	20	7	92	NATION	
GR	290	255		SC	AL	19	7	92	NATION	FEMALE
GR	290	290		SC	AL	21	7	92	NATION	FEMALE
GR	291	330		SC	AL	23	7	92	NATION	MALE
GR	292	300		SC	AL	18	7	92	NATION	IMM
GR	294	284		SC	AL	21	7	92	NATION	FEMALE
GR	295	350		SC	AL	23	7	92	NATION	FEMALE
GR	296	312		SC	AL	21	7	92	NATION	MALE
GR	297	316		SC	AL	21	7	92	NATION	MALE
GR	298	400		SC	AL	20	7	92	NATION	FEMALE
GR	300	312		SC	AL	19	7	92	NATION	FEMALE
GR	305	312		SC	AL	19	7	92	NATION	FEMALE
GR	306	312		SC	AL	21	7	92	NATION	FEMALE
GR	308	340		SC	AL	21	7	92	NATION	MALE
GR	310	360		SC	AL	18	7	92	NATION	MALE

ADULT AGE DATA WILLISTON WATERSHED STREAMS

SPECIES	LENGTH	WEIGHT	AGE		CAPTURE	DATE SAMPLE				
CODE	(mm)	(g)	Yr	METHOD	METHOD	DY	MO	YR	SYSTEM	COMMENTS
GR	310	410		SC	AL	20	7	92	NATION	
GR	310	369		SC	AL	21	7	92	NATION	MALE
GR	311	290		SC	AL	21	7	92	NATION	MALE
GR	312	340		SC	AL	21	7	92	NATION	FEMALE
GR	312	400		SC	AL	20	7	92	NATION	
GR	313	340		SC	AL	21	7	92	NATION	MALE
GR	313	315		SC	AL	21	7	92	NATION	FEMALE
GR	313	430		SC	AL	20	7	92	NATION	MALE
GR	314	397		SC	AL	20	7	92	NATION	MALE
GP	316	430		SC	AL	23	7	92	NATION	MALE
GR	316	440		SC	AL	20	7	92	NATION	
GR	318	397		SC	AL	20	7	92	NATION	MALE
GP	320	397		SC	AL	17	7	92	NATION	FEMALE
GR	320	440		SC	AL	20	7	92	NATION	MALE
GR	320	440		SC	AL	16	7	92	NATION	MALE
GR	320	397		SC	AL	20	7	92	NATION	IMM FEMALE MORT
GR	324	420		SC	AL	20	7	92	NATION	FEMALE
GR	325	470		SC	AL	18	7	92	NATION	MALE
GR	325	480		SC	AL	19	7	92	NATION	MALE
GR	325	420		SC	AL	23	7	92	NATION	MALE
GR	325	397		SC	AL	20	7	92	NATION	MALE
GR	325	369		SC	AL	21	7	92	NATION	MALE
GR	327	425		SC	AL	20	7	92	NATION	FEMALE
GR	327	440		SC	AL	23	7	92	NATION	MALE
GR	329	397		SC	AL	20	7	92	NATION	MALE
GR	329	397		SC	AL	20	7	92	NATION	IMM FEMALE MORT
GR	330	340		SC	AL	20	7	92	NATION	MALE
GR	332	454		SC	AL	20	7	92	NATION	FEMALE
GR	333	460		SC	AL	23	7	92	NATION	FEMALE
GR	333	397		SC	AL	21	7	92	NATION	MALE
GR	333	450		SC	AL	23	7	92	NATION	FEMALE
GR	335	470		SC	AL	23	7	92	NATION	MALE
GR	335	470		SC	AL	23	7	92	NATION	MALE
GR	340	465		SC	AL	18	7	92	NATION	MALE
GR	342	510		SC	AL	23	7	92	NATION	MALE
GR	343	490		SC	AL	23	7	92	NATION	MALE
GR	349	500		SC	AL	23	7	92	NATION	MALE
GR	388	370		SC	AL	21	7	92	NATION	MALE
LT	363	430		SC	AL	16	7	92	NATION	
MW	290	250	5	SC	AL	4	8	89	NATION	NATION UPPER BRIDGE
RB	203	110	2	SC	AL	4	8	89	NATION	NATION UPPER BRIDGE
RB	205	60	2	SC	AL	10	8	89	NATION	NATION BELOW LAKE
RB	230	130	2	SC	AL	10	8	89	NATION	NATION BELOW LAKE
RB	230	135	2	SC	AL	6	8	89	NATION	NATION RIVER FALLS
RB	230	150	2	SC	AL	9	8	89	NATION	NATION MID RIVER
RB	240	155	2	SC	AL	10	8	89	NATION	NATION BELOW LAKE
RB	250	160	3	SC	AL	10	8	89	NATION	NATION BELOW LAKE
RB	255	200	R	SC	AL	9	8	89	NATION	NATION MID RIV
RB	260	160	3	SC	AL	10	8	89	NATION	NATION BELOW LAKE
RB	260	160	3	SC	AL	10	8	89	NATION	NATION BELOW LAKE
RB	270	200	4	SC	AL	10	8	89	NATION	NATION BELOW LAKE

ADULT AGE DATA WILLISTON WATERSHED STREAMS

SPECIES CODE	LENGTH (mm)	WEIGHT (g)	AGE Yr	METHOD	CAPTURE METHOD	DATE SAMPLE DY	MO	YR	SYSTEM	COMMENTS
RB	270	165	3	SC	AL	10	8	89	NATION	NATION BELOW LAKE
RB	275	255	3	SC	AL	10	8	89	NATION	NATION BELOW LAKE
RB	280	215	R	SC	AL	10	8	89	NATION	NATION BELOW LAKE
RB	280	210	3	SC	AL	10	8	89	NATION	NATION BELOW LAKE
RB	290	280	4	SC	AL	9	8	89	NATION	NATION MID RIVER
RB	295	220	3	SC	AL	10	8	89	NATION	NATION BELOW LAKE
RB	300	250	4	SC	AL	10	8	89	NATION	NATION BELOW LAKE
RB	320	260	4	SC	AL	10	8	89	NATION	NATION BELOW LAKE
RB	320	260	4	SC	AL	10	8	89	NATION	NATION BELOW LAKE
RB	340	350	4	SC	AL	6	8	89	NATION	NATION RIVER FALLS
RB	380	510	5	SC	AL	4	8	89	NATION	NATION UPPER BRIDGE
RB	155	50		SC	AL	17	7	92	NATION	
RB	195	113		SC	AL	17	7	92	NATION	
RB	202	113		SC	AL	17	7	92	NATION	
RB	210	170		SC	AL	17	7	92	NATION	
RB	216	140		SC	AL	21	7	92	NATION	
RB	220	170		SC	AL	17	7	92	NATION	
RB	230	170		SC	AL	17	7	92	NATION	
RB	231	210		SC	AL	16	7	92	NATION	
RB	233	170		SC	AL	21	7	92	NATION	
RB	235	225		SC	AL	19	7	92	NATION	
RB	245	198		SC	AL	17	7	92	NATION	
RB	246	320		SC	AL	18	7	92	NATION	
RB	252	180		SC	AL	16	7	92	NATION	
RB	255	240		SC	AL	19	7	92	NATION	
RB	266	198		SC	AL	20	7	92	NATION	
RB	275	240		SC	AL	18	7	92	NATION	
RB	280	284		SC	AL	17	7	92	NATION	
RB	285	340		SC	AL	18	7	92	NATION	
RB	290	255		SC	AL	17	7	92	NATION	
RB	290	280		SC	AL	19	7	92	NATION	
RB	291	240		SC	AL	18	7	92	NATION	
RB	297	284		SC	AL	20	7	92	NATION	
RB	300	284		SC	AL	17	7	92	NATION	
RB	302	369		SC	AL	17	7	92	NATION	
RB	302	312		SC	AL	17	7	92	NATION	
RB	395	620		SC	AL	19	7	92	NATION	
RB	190	85		SC	AL	13	8	91	OSILINKA	MID-RIVER SITE
RB	245			SC	AL	17	8	91	OSILINKA	MID RIVER SITE
RB	290	295	-	SC	AL	17	8	91	OSILINKA	MID-RIVER SITE
RB	290	300		SC	AL	17	8	91	OSILINKA	MID-RIVER SITE
RB	300	340		SC	AL	17	8	91	OSILINKA	MID RIVER SITE
RB	300	385	-	SC	AL	17	8	91	OSILINKA	MID RIVER SITE
RB	315	450	-	SC	AL	17	8	91	OSILINKA	MID RIVER SITE
RB	340	570		SC	AL	13	8	91	OSILINKA	MID RIVER SITE
DV	535	1300	11	OT	AL	25	8	89	PESIKA	FINLAY REACH TRIB
DV	670	2800	12	OT	AL	25	8	89	PESIKA	FINLAY REACH TRIB
DV	680	3200	10	OT	AL	25	8	89	PESIKA	FINLAY REACH TRIB
DV	730	3700	13	OT	AL	25	8	89	PESIKA	FINLAY REACH TRIB
DV	740	4000	11	OT	AL	24	8	89	PESIKA	FINLAY REACH TRIB
LT	830	6563	11	OT	AL	24	8	89	PESIKA	FINLAY REACH TRIB

ADULT AGE DATA WILLISTON WATERSHED STREAMS

SPECIES CODE	LENGTH (mm)	WEIGHT (g)	AGE Yr	METHOD	CAPTURE METHOD	DATE SAMPLE DY	MO	YR	SYSTEM	COMMENTS
DV	305	340	3	SC	AL	23	8	90	SCOTT	
DV	340	400	3	SC	AL	23	8	90	SCOTT	
DV	350	460	3	SC	AL	23	8	90	SCOTT	
DV	350	470	3	SC	AL	23	8	90	SCOTT	
DV	370	550	3	SC	AL	23	8	90	SCOTT	
DV	390	640	2	SC	AL	23	8	90	SCOTT	
DV	420	780	3	SC	AL	23	8	90	SCOTT	
DV	445	800	3	SC	AL	23	8	90	SCOTT	
DV	460	900	4	SC	AL	23	8	90	SCOTT	
DV	417	800			TU	9	9	91	SCOTT	MALE
DV	471	1200			TO	13	9	91	SCOTT	MALE
DV	475	1000			TO	9	9	91	SCOTT	FEMALE
DV	481	900			TO	9	9	91	SCOTT	FEMALE
DV	509	1200			TO	13	9	91	SCOTT	MALE
DV	518	1200			TO	13	9	91	SCOTT	MALE
DV	535	2000			TO	13	9	91	SCOTT	FEMALE
DV	545	1100			TO	13	9	91	SCOTT	MALE
DV	550	1700			TO	13	9	91	SCOTT	MALE
DV	555	1400			TO	13	9	91	SCOTT	MALE
DV	580	1800			TO	10	9	91	SCOTT	FEMALE
DV	584	2000			TO	13	9	91	SCOTT	FEMALE
DV	584	200			TO	7	9	91	SCOTT	FEMALE - SPENT
DV	594	1800			TO	13	9	91	SCOTT	MALE
DV	596	1700			TO	9	9	91	SCOTT	FEMALE
DV	600	3000			TO	12	9	91	SCOTT	FEMALE
DV	600	1700			TO	11	9	91	SCOTT	FEMALE
DV	600	2000			TO	13	9	91	SCOTT	FEMALE
DV	600	2000			TO	13	9	91	SCOTT	FEMALE
DV	600	2300			TO	13	9	91	SCOTT	MALE
DV	615	2300			TO	10	9	91	SCOTT	FEMALE
DV	618	2700	7	OT	AL		8	91	SCOTT	FEMALE
DV	630	2600	10	OT	AL	-	8	91	SCOTT	FEMALE
DV	630	2600	10		TU	10	8	91	SCOTT	FEMALE - MORT
DV	632	2600	8	OT	AL	-	8	91	SCOTT	FEMALE
DV	647	2900			TO	13	9	91	SCOTT	FEMALE
DV	655	2600			TO	13	9	91	SCOTT	MALE
DV	655	3000			TO	13	9	91	SCOTT	MALE
DV	665	2900			TO	13	9	91	SCOTT	MALE
DV	680	3200			TO	13	9	91	SCOTT	FEMALE
DV	684	2800			TO	8	9	91	SCOTT	FEMALE - SPENT
DV	689	3700	9	OT	AL		8	91	SCOTT	MALE
DV	693	3400			TO	13	9	91	SCOTT	FEMALE
DV	700	3200			TO	13	9	91	SCOTT	FEMALE
DV	709	2800			TO	9	9	91	SCOTT	FEMALE
DV	710	3400			TO	13	9	91	SCOTT	FEMALE
DV	711	3000			TO	10	9	91	SCOTT	FEMALE
DV	712	3000			TO	9	9	91	SCOTT	FEMALE
DV	716	3800			TO	13	9	91	SCOTT	FEMALE
DV	719	3000			TO	13	9	91	SCOTT	FEMALE
DV	[illegible]	3200			TO	11	9	91	SCOTT	FEMALE
DV	[illegible]	4300			TO	10	9	91	SCOTT	FEMALE

ADULT AGE DATA WILLISTON WATERSHED STREAMS

SPECIES CODE	LENGTH (mm)	WEIGHT (g)	AGE Yr	METHOD	CAPTURE METHOD	DATE SAMPLE DY	MO	YR	SYSTEM	COMMENTS
DV	723	4600			TO	10	9	91	SCOTT	MALE
DV	728	3700			TO	13	9	91	SCOTT	FEMALE
DV	729	3800			TO	13	9	91	SCOTT	MALE
DV	735	5300			TU	11	8	91	SCOTT	MALE
DV	735	4200			TO	13	9	91	SCOTT	FEMALE
DV	740	4000			TO	13	9	91	SCOTT	FEMALE
DV	744	4200			TO	13	9	91	SCOTT	FEMALE
DV	749	3300			TO	11	9	91	SCOTT	FEMALE
DV	753	3600			TO	13	9	91	SCOTT	FEMALE
DV	754	4400			TO	13	9	91	SCOTT	FEMALE
DV	760	4200			TU	13	8	91	SCOTT	FEMALE
DV	765	4900			TO	13	9	91	SCOTT	FEMALE
DV	768	4000			TO	13	9	91	SCOTT	FEMALE
DV	788	4600			TO	13	9	91	SCOTT	MALE
DV	780	5000	9	OT	AL		8	91	SCOTT	MALE
DV	783	4000			TO	12	9	91	SCOTT	FEMALE
DV	798	4900			TO	13	9	91	SCOTT	FEMALE
DV	800	5100			TU	14	8	91	SCOTT	FEMALE
DV	810	550			TO	13	9	91	SCOTT	FEMALE
MW	365	500			TO	21	8	91	SCOTT	
MW	380	500			TO	23	8	91	SCOTT	FEMALE
RB	240	240	3	SC	AL	23	8	91	SCOTT	
RB	265	280		SC	AL	23	8	91	SCOTT	PROBABLE 3+, NON PREFERED SCALE
RB	280	200	3	SC	AL	2	7	89	SELWIN	PEACE REACH TRIB
RB	285	150	3	SC	AL	2	7	89	SELWIN	PEACE REACH TRIB
RB	330	400	4	SC	AL	2	7	89	SELWIN	PEACE REACH TRIB
RB	365	450	4	SC	AL	2	7	89	SELWIN	PEACE REACH TRIB
DV	470	1000	9	OT	TO	29	8	91	WESTON	FEMALE (FENCE MORTALITY)
DV	470	1000	10	OT	AL		8	91	WESTON	FEMALE
DV	587	2000	9	OT	TO	29	8	91	WESTON	FEMALE (FENCE MORTALITY)
DV	587	2000	9	OT	AL		8	91	WESTON	FEMALE
DV	685	3500	9	OT	TO	29	8	91	WESTON	FEMALE (FENCE MORTALITY)
DV	685	3500	10	OT	AL		8	91	WESTON	FEMALE
DV	755	4500			TU	17	8	91	WESTON	FEMALE

APPENDIX I

Fish Species Data Entry Codes

Fish Species

bull trout	DV
burbot	BB
brook trout	EB
dace	DC
grayling (Arctic)	GR
kokanee	KO
lake chub	LKC
lake trout	LT
lake whitefish	LW
largescale sucker	CSU
longnose dace	LNC
longnose sucker	LNS
northern squawfish	NSC
peamouth chub	PCC
pigmy whitefish	PW
prickly sculpin	CAS
rainbow trout	RB
rainbow trout (stocked)	RB*
redsided shiner	RSC
mountain whitefish	MW
sculpins (general)	CC
slimy sculpin	CCG
suckers (general)	SU
trout (general)	TR
whitefish (general)	WF

1 Explanatory Notes

The aquatic system inventory is a stream sampling procedure, which produces information in the broad categories: physical channel and valley characteristics, substrate (bed) materials, aquatic and bank vegetation, hydraulics and fish species presence and life history.

The reach symbol [illegible] summarizes some information about each reach while the site specific symbols [illegible] features at specific locations on the stream. The lake symbol [illegible] summarizes four types of lake information.

Complete data sets for watersheds, reaches and sample points are stored in the B.C. Aquatic Data Base.

[illegible]

[illegible]

2 Example (Reach Symbol)

[illegible]

Example

Rb Chf (Co)
9815 2341

[illegible]

3 Fish Species

[illegible]

4 Channel Components

[illegible]

[illegible]

5 Bed (Substrate) Materials

[illegible]

6 Streams with Limited Information

[illegible]

7 Lakes

[illegible]

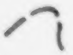
8 Site Specific Information

R3	Reach boundary and reach number. Number is placed at upstream reach boundary. Reach breaks are implicit at all lake inlets or outlets.
3R	Site - specific channel features are symbolized as follows:

R (Rock)	BD (Beaver Dam)	Chan (Channelized)
L (Logs)	W (Culvert)	Dyke
B (Blocks)	V (Velocity)	Canyon
D (Man-made Dam)	C (Cascade/Chute	F (Fall), dimensions unknown (method assumed unless commented upon.)
	feature defined by a comment in the reach file.)	

Heights (m) if available, are indicated as numbers before symbols (e.g. 3F = 3m high fall). Length (m) is indicated as a number after the symbol (e.g. C50 = 50 m long cascade/chute).
R, L, B, require dimensions.

20R	Reach boundary which is also an obstruction.
C	Zones of the above symbolized types may also be indicated with or without height and length information (e.g. zone of chute or cascade). Zones of channelization (Chan), dykes (Dyke), Canyon and subsurface flow may be indicated.
5R200	5 m high and 200 m long zone of rock cascades.
Ch	Clear evidence (e.g. persistent redds or observed spawning adults) of spawning by the indicated species in the indicated zone.
W	A major bank or valley side wall slump zone. (This minimum standard symbol indicates a zone of 100 m or less; when zone is greater than 100 m in length, the symbol will be lengthened so its end-points indicate the end-points of the zone).
*	General zone of flood and side channels.
X	Persistent debris accumulation.
)(	Bridge
)(	Ford
(2)	Site (point) number with biophysical data available.
△4	Water quality sampling site number.
7	Water quantity sampling site number.
(V)	An alluvial sink hole without surface effluent.
	Termination of survey. Indicates reach information available to this point.

	Spring unclassified
	Spring: F fresh T thermal S saline
	Karst
	The [illegible] watershed boundary
	Major watershed boundary
	Sub watershed boundary
	Minor watershed boundary
20-8500-120-360-250	Watershed system code number (example applies to [illegible] creek).

9 References

Additional aquatic information available from:

Standards and Data Unit
Water Management Branch
Ministry of Environment
Parliament Buildings
Victoria, B.C. V8V 1X4

For more detail regarding the system please refer to the manual entitled "Aquatic System Inventory", APD Tech Pap.

Additional maps available from:

The Map Library
Surveys and Resource Mapping Branch
Ministry of Environment
Parliament Buildings
Victoria, B.C. V8V 1X4

10 Credits

Mapped by: C. MILLER RETREK

Date of fieldwork: AUG. 1977

Drafted by Cartographic Section, Surveys and Resource Mapping Branch, Ministry of Environment.

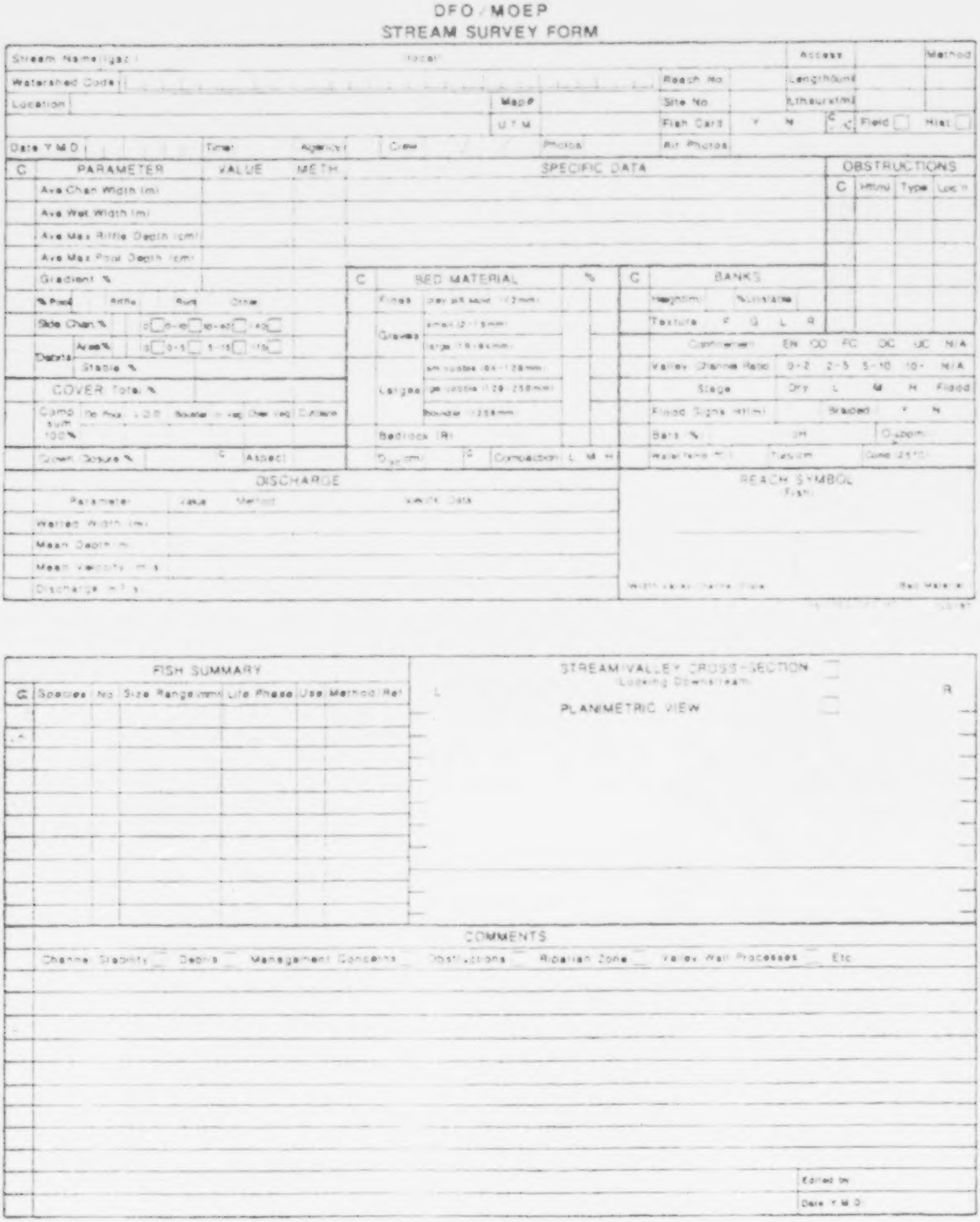
Date drafted: ____________

Revision dates: ____________

Base map provided by Surveys and Resource Mapping Branch, Ministry of Environment, Victoria B.C.

1982 edition

POINT SAMPLE CARDS EMPLOYED



DFO / MOEP
STREAM SURVEY FORM

Stream Name (gaz) | (local) | Access | Method
Watershed Code | Reach No | Length(km)
Location | Map # | Site No | Length surv(m)
U T M | Fish Card Y N | Field ☐ Hist ☐
Date Y M D | Time | Agency | Crew | Photos | Air Photos

C	PARAMETER	VALUE	METH	SPECIFIC DATA
	Ave Chan Width (m)			
	Ave Wet Width (m)			
	Ave Max Riffle Depth (cm)			
	Ave Max Pool Depth (cm)			
	Gradient %			
	% Pool	Riffle	Run	Other
	Side Chan %	0 ☐ 0-10 ☐ 10-40 ☐ >40 ☐		
	Debris Area %	0 ☐ 0-5 ☐ 5-15 ☐ >15 ☐		
	Debris Stable %			
	COVER Total %			
	Comp sum 100%			
	Crown Closure %		Aspect	

OBSTRUCTIONS

C	Ht(m)	Type	Loc'n

C	BED MATERIAL		%
	Fines	clay silt sand (<2mm)	
	Gravels	small (2-19mm)	
	Gravels	large (19-64mm)	
	Larges	sm cobble (64-128mm)	
	Larges	lg cobble (128-256mm)	
	Larges	boulder (>256mm)	
	Bedrock (R)		
	D_{90} (cm)	Compaction L M H	

C	BANKS	
	Height(m)	% Unstable
	Texture F G L R	
	Confinement	EN CO FC OC UC N/A
	Valley Channel Ratio	0-2 2-5 5-10 10- N/A
	Stage	Dry L M H Flood
	Flood Signs Ht(m)	Braided Y N
	Bars %	
	Water Temp (°C)	Turb	Cond (25°C)

DISCHARGE

	Parameter	Value	Method	Specific Data
	Wetted Width (m)			
	Mean Depth (m)			
	Mean Velocity (m/s)			
	Discharge (m³/s)			

REACH SYMBOL
(Fish)

Width Valley Channel Slope | Bed Material

FISH SUMMARY

C	Species	No	Size Range(mm)	Life Phase	Use	Method	Ref

STREAM/VALLEY CROSS-SECTION ☐
(Looking Downstream)
L | R
PLANIMETRIC VIEW ☐

COMMENTS

Channel Stability __ Debris __ Management Concerns __ Obstructions __ Riparian Zone __ Valley Wall Processes __ Etc

Edited by
Date Y M D

SNORKLE SURVEYS WILLISTON LAKE

STREAM ____________ WATERSHED CODE ________ DATE ______

REACH ______ MEAN WETTED WIDTH ______ m VISIBILITY ________ M

NUMBER OF OBSERVERS ______ %OF AREA COVERED ___ WATER TEMP ______

LENGTH OF SWIM ______ LENGTH OF REACH ______ UTM TO UTM ________

SPAWNING ________ REARING ______ ADULT HOLDING ____________

UTILIZATION ____________

COMMENTS ____________

FISH OBSERVED SIZE	0-10cm	10-30cm	30-50	50+cm	TOTAL
DV					
RB					
AG					
MW					
LNS					

COMMENTS ____________

Each observer is to make an independent evaluation for:
spawning/rearing/adult holding/ =1-5 1=poor 2=low 3=moderate,
4=good, 5= excellent
utilization.. 1 = barren, 2 = underseeded 3 = moderate, 4 = at
carrying capacity , 5 = overseeded

DETAILED BIOPHYSICAL FORMS EMPLOYED

Crew:	R#	SYSTEM: S#	Date:	UTM	
/TYPE	LENGTH	WW (m)	CW (m)	SP. H.%	MEAN D. (cm

Crew:	R#	SYSTEM: S#	Date:	Loc.	2
/MAX D.(cm)	D-90	SLOPE	I.STM. CO f p a	O. STM. c O	COMMENTS